

**Contents**

- The Context ..... 1
- Results & Recommendations ..... 1
- Construction Delivery ..... 2
- Advantage Ohio and the Need for Reform..... 4
- Ohio Construction Reform Panel Objectives ..... 4
- Staying Within the Lines – Organizing Principles..... 4
- The Process ..... 6
  - Panel Composition ..... 6
  - Panel Activity..... 7
- Recommendations Tables..... 8
- Recommendations in Detail ..... 12
  - Flexibility Measures..... 12
    - Create Flexibility in Project Delivery Methods Based Upon Specific Project Needs..... 12
    - Allow Electronic Procurement of Services and Bidding of Construction ..... 17
    - Create Expedited Process for Small Projects..... 18
    - Streamline Current Law Related to Design and Construction of Capital Improvements ..... 19
    - Mitigate Cost Escalation Impacts to Owners and Contractors..... 20
  - Accountability Measures ..... 22
    - Risks & Rewards..... 22
    - Proper Qualifications for Construction Administration ..... 24
    - Proper Qualifications for Contractors & Construction Managers..... 25
    - Integrate Life-Cycle Costing & Commissioning on All Projects ..... 26
    - Uniform Evaluation Process for Design & Construction Teams’ Performance ..... 27
    - Develop an Audit System for Contracting Authorities to Ensure Compliance with State Capital Improvement Practices ..... 28
    - Properly Administer Contractor Retainage ..... 29
    - Increase Collaboration and Partnering Among State Owners and Designers and Contractors.. 30
- Transparency Measures..... 32
  - Implement Master Planning Across the State Enterprise ..... 32
  - Utilize Standard Contracts & Processes for All Public Construction ..... 33

Maintain Openness and Competitiveness of Qualifications, Documents and Specifications .....	34
Reform Public Advertising and Notification Requirements.....	35
Maximize Opportunities for EDGE Vendors On Capital Improvement Projects.....	36
Include Neutral Industry Professionals On Qualifications Based Selection Committees .....	37
Efficiency Measures .....	39
Better Manage Construction Project Information With Enterprise Project Management Software.....	39
Utilize Building Information Modeling (BIM) Throughout Project/Building Lifecycle.....	40
Implement Green Building Standards for Public Construction Projects .....	41
Simplify Owner Review and Approval Processes.....	42
Promptly Pay Design Professionals and Contractors .....	43
Streamline Dispute Resolution Processes .....	44
After the Panel: Implementing Reform .....	46
Appendices .....	47
Appendix 1: Current & Proposed Construction Delivery Methods .....	47
Multiple Prime Contracting – Current Method .....	47
Construction Manager as Advisor – Current Method .....	47
Design-Build Construction Delivery – Proposed Additional Method.....	48
Construction Manager At-Risk – Proposed Additional Method .....	48
General Contracting – Proposed Additional Method .....	49
Appendix 2: Time is Money – The Faster Track of Phased Construction.....	50
Appendix 3: Ohio Construction Reform Panel.....	51

Since taking office in 2007, the administration of Governor Ted Strickland has been working in public-private partnership on some of the most difficult issues affecting the business of state government and its role in fostering a healthy business climate. Known as Advantage Ohio, this initiative has led to common sense regulatory reform by state agencies, reforms in the state's purchasing practices, a renewed commitment to promoting minority-owned small businesses in Ohio and expansion of the Ohio Business Gateway.

In August of 2008, Gov. Strickland requested the Ohio Department of Administrative Services to bring together various public and private sector stakeholders to discuss another huge issue affecting the state's bottom line and Ohio's economy – publicly funded or administered construction. The Ohio Construction Reform Panel (OCRP) was established. The following executive summary and report detail the Panel's work and recommendations.

### The Context

Public construction in Ohio accounts for nearly \$3 billion annually in state spending. These projects include everything from renovations to state government buildings to local school building through the Ohio School Facilities Commission to building and renovation projects on Ohio's public university and college campuses. Construction in Ohio is a major economic driver and job creator and public construction is a significant share.

For more than 132 years, there has been no fundamental change in the method of project delivery for the state's public construction

projects. During that time, as with every other U.S. industry, major changes have occurred in technology, management techniques and practices, materials and the need for greater energy efficiency in the design and construction industry.

The Panel does not believe that public construction in Ohio has been without its share of successes. The Panel does believe that state owners, the design community, contractors, trades people and laborers would benefit from a slate of reforms which commit stakeholders to core principles and the ideas for reform that they spawned over the course of several months. These principles and examples of reform ideas are:

**Transparency** - Maintain openness and competitiveness of qualifications, documents and specifications.

**Flexibility** – Allow stakeholders into construction projects earlier and allow the state additional project delivery options.

**Accountability** – Ensure all sides of a construction project are properly qualified and that systems of accountability including audits are well understood by all parties and universal across the state enterprise.

**Efficiency** – Take advantage of the power of technology to cut costs and eliminate waste while ensuring prompt payment by the state for the work being done.

### Results & Recommendations

From November 2008 and into the spring of 2009 there were numerous meetings of the full Panel and its subgroups. Each recommendation contained in this report began as an idea culled from an initial survey,

was vetted by one of four Panel subgroups and was further discussed and voted on during a full Panel meeting. For a recommendation to be included in this report, it needed to receive a minimum of 75% of Panel members voting for it in the affirmative.

### Construction Delivery

For many decades there has been one primary method for delivering public construction: Multiple Prime Contracting. Multiple prime delivery was joined some time ago by Construction Manager as Advisor Contracting, a method currently employed by the Ohio School Facilities Commission.

It is the shared belief of the Panel that Multiple Prime Contracting has served the state well for many years. It is recommended by the Panel that multiple prime delivery should continue on as one of the methods for project delivery at the state's disposal. In many cases, multiple prime delivery will be the construction management model of choice for public owners.

Of course, there would be no construction without the contractors and builders who move designs on blueprints into usable public buildings and workspaces. One major hurdle the Panel was able to overcome was the hesitancy among builders and contractors to modify the construction delivery playing field by allowing state owners additional choices in construction delivery.

Currently, contractors are afforded certain protections by the very nature of Multiple Prime Contracting and Ohio construction law. The major concern of some business people and trade union representatives was that the addition of three new project delivery

methods – Design Build, Construction Manager at Risk and General Contracting – would dilute or erase current protections.

The Panel was able to agree on adding the three additional forms of construction delivery if they were accompanied by protections for contractors and other state construction vendors.

This issue is singled out among the many other recommendations of the Panel because it was the most difficult work of the Panel and the greatest testament to the collaborative effort which occurred between state representatives and industry interests. In the end, the state, the industry and Ohio's taxpayers all find positives in the outcome.

Specifically, protections to be afforded Ohio's contractors, including those providing mechanical, electrical and plumbing services include:

1. Direct bidding of MEP contracts under Construction Manager at Risk and Design Build,
2. Utilization of a single set of model contract documents for vertical building construction including:
  - a. architect/engineer agreements,
  - b. construction manager agreements,
  - c. trade contractor agreements, and,
  - d. general conditions for contracting
3. Implementation of prompt payment and payment assurance provisions, and,
4. Implementation of a contractor certification and approval to bid pre-qualification process.

## Executive Summary

With the addition of Design Build, Construction Manager at Risk and General Contracting the state and Ohio's taxpayers will gain as well:

1. More collaboration and less vendor conflict
2. Improved decision making which increases overall value to building owners
3. Enhanced use of technology to facilitate project management
4. Reduction of the construction timeline, saving resources and delivering outcomes to owners more quickly

The balance of this document is the full report of the Ohio Construction Reform Panel. Detailed descriptions of existing and new construction delivery methods are contained in the Flexibility section. Although some focus has been placed on construction delivery in this summary, it cannot be ignored that there are some two dozen individual recommendations for reforming state construction and ultimately delivering more quality and value for Ohio's taxpayers.

Upon release of this report, it is the state owners' intent, led by the Department of Administrative Services, Ohio Board of Regents, higher education (including The Ohio State University) and the Ohio School Facilities Commission to work with the Strickland Administration toward full and expeditious implementation of these recommendations.

Finally, a word of appreciation should be offered to the several dozen state employees, private persons and business people who worked as members of the Panel or in supporting roles over the past six months.

Their end result is better public policy and more accountable government – every Ohioan should take pride in that outcome.

## Advantage Ohio and the Need for Reform

Advantage Ohio is the now four-part initiative of Governor Ted Strickland aimed at improving Ohio's business climate while reforming state government operations. Advantage Ohio includes Regulatory Reform, Procurement Reform, Expansion of the Ohio Business Gateway and now Construction Reform.

As with the three efforts which preceded it, Construction Reform was identified by Gov. Strickland as an area of state policy, administrative effort and spending which was due for a 21<sup>st</sup> century review and overhaul. The scope of construction spending by state government, universities and Ohio's public schools is huge – nearly \$3 billion per year. In addition, state construction laws impact hundreds of millions of dollars annually in construction activity that is funded with non-state dollars. This spend is not only a significant portion of the state's capital budget, it also represents a major economic driver for Ohio's construction and design industries. The current method of project delivery utilized on state construction projects has remained in place without material alteration for 132 years. While other areas of public policy and administration have changed with the times since Rutherford B. Hayes was president, public construction law has not changed substantially.

The work of Ohio's Construction Reform Panel could not be timelier. Ohio stands to gain over \$8 billion in stimulus funding over the course of the next 18 months from the federal government. A substantial portion of this money is aimed at "shovel-ready" public works projects. Several of the Panel's recommendations could make it easier for Ohio to maximize funding opportunities offered by federal economic stimulus programs.

## Ohio Construction Reform Panel Objectives

The Ohio Construction Reform Panel (OCRCP) set about to:

1. Review the current design and construction laws and practices as compared to industry best practices.
2. Provide recommendations to improve quality, cut costs for taxpayers and bring more value to the public construction process.
3. Utilize a collaborative approach in developing recommendations.

## Staying Within the Lines – Organizing Principles

Based on the proven model which delivered Regulatory Reform and state Procurement Reform, the OCRCP was designed to operate as a public-private partnership in order to meet the needs of all stakeholders. Ohio's construction industry and its workforce are key to the success of any reform effort. Because of this, the effort became a collaboration which included representatives of the design community; general contractors; mechanical, electrical and plumbing contractors; labor and trade union representatives; the Ohio General Assembly; various state agencies including the Ohio School Facilities Commission, the Ohio Board of Regents, the Ohio State University and the State Architect's Office; minority contractors and facilitation by one of the nation's foremost construction

law experts, Cleveland attorney Jeffrey Appelbaum of Thompson-Hine with staff from Project Management Consultants, LLC, a wholly owned subsidiary of Thompson-Hine, LLP.

Staying within the lines for the OCRP meant that any recommendations would need to fall within one or more of four distinct categories: Accountability, Efficiency, Transparency and Flexibility. Staying within the lines also meant that prevailing wage law and issues such as project labor agreements were considered out of scope for the panel.

### OCRP Organizing Principles - Examples

Accountability	<ul style="list-style-type: none"> <li>• Sharing of risks &amp; rewards</li> <li>• Better management of risks &amp; rewards</li> <li>• Properly qualified state managers, private sector professionals</li> <li>• Improve accountability to the taxpayer as well as to the state’s private sector construction industry partners</li> </ul>
Efficiency	<ul style="list-style-type: none"> <li>• Best value for money invested in projects</li> <li>• Improve time of delivery for projects</li> <li>• Better leveraging of technology, Building Information Modeling</li> <li>• Cut red tape</li> <li>• Energy efficiency</li> <li>• Prompt pay</li> <li>• Better dispute resolution</li> </ul>
Transparency	<ul style="list-style-type: none"> <li>• Master planning across state enterprise</li> <li>• Standard documentation, processes</li> <li>• Openness in qualifications, documents and specifications</li> <li>• Construction procurement reforms</li> </ul>
Flexibility	<ul style="list-style-type: none"> <li>• More options in construction delivery</li> <li>• Improve design and construction processes</li> <li>• Remove unnecessary steps from state processes and procedures</li> <li>• Positively impact quality of state construction</li> </ul>

## The Process

### Panel Composition

#### Stakeholder Community

Contractors

#### Represented By

Associated General Contractors of Ohio  
Mechanical Contractors Association  
National Electrical Contractors Association  
Minority & Independent Contractors Alliance  
Ohio State Building & Construction Trades Council

Trade Unions

International Brotherhood of Electrical Workers  
United Association of Plumbers & Pipefitters  
United Brotherhood of Carpenters & Joiners  
Laborers International Union

Subject Matter Experts

The Cleveland Clinic  
M.A. Mortenson

Design Industry

American Institute of Architects  
American Council of Engineering Companies

Construction Management

Construction Management Assoc. of America

Owners/Private Sector

Continental Real Estate

Ohio General Assembly

Senate Majority Caucus  
House Majority Caucus  
Senate Minority Caucus  
House Minority Caucus

State Agencies/Public Owners

The Ohio State University  
Ohio Board of Regents  
Ohio School Facilities Commission  
Office of Budget & Management  
Ohio Department of Transportation  
Department of Administrative Services

Facilitation

Project Management Consultants, LLC, a subsidiary of  
Thompson-Hine, LLP

## Panel Activity

Prior to the initial full meeting of the OCRP in November 2008, a survey was taken by panel members to identify individual issues for discussion which would fit into one or more of the four organizing principles. The results of this survey became the list of issues which were considered by the panel's four subgroups on Accountability, Efficiency, Transparency and Flexibility.

The OCRP met in full five times between November 2008 and April 2009. These sessions were facilitated by Mr. Appelbaum. The first session provided the panel members an overview of current Ohio public construction law and practice as well as a review of the survey responses which took the form of an ideas list. The list was broken out into the subgroup categories and panel members chose the subgroups in which they would participate, with some members participating in all four subgroups. It should also be noted that from time to time industry subject matter experts were brought before the panel to present on topics such as Building Information Modeling and private sector best practices.

Thirteen meetings of the subgroups were held, beginning in November with subsequent full panel meetings devoted to report outs from these groups. As ideas crystallized into recommendations, votes were taken by the full panel in order to formally adopt them. In some cases, where there was considerable debate on certain recommendations, these measures were further vetted by the full committee. Each recommendation included in this report achieved greater than a 75% vote in the affirmative.

After the work of the Panel and its subgroups, this report and its recommendations represent the second major phase of the reform effort. Implementation of the OCRP recommendations will be the final phase and include:

- Changes in directives, rules or processes;
- Executive Order provisions; and,
- Statutory changes.

## Recommendations Tables

N = No – Y=Yes – TBD=To Be Determined

	No.	Recommendation	Proposition	Legislation?	Executive Order?
<b>FLEXIBILITY</b>	1	Create flexibility in project delivery methods based on specific project needs	Add Construction Manager at Risk as an allowable project delivery method with bid, prompt payment & contracting protection	Y	N
			Add Design/Build as an allowable project delivery method with bid, prompt payment & contracting protection	Y	N
	2	Allow electronic procurement of services and bidding of construction	Seek to reconcile & develop phased implementation of electronic bidding of construction	TBD	N
	3	Create expedited process for small projects	Increase minimum threshold for multiple primes to \$200K & maximum threshold for GC delivery method equal to \$600K	Y	N
	4	Streamline current law related to design and construction of capital improvements	Consolidate & organize law related to design & construction	Y	N
	5	Mitigate cost escalation impacts to owners & contractors	Incorporate adjustments for high inflation in standard model documents	N	N

	No.	Recommendation	Proposition	Legislation?	Executive Order?
ACCOUNTABILITY	6	Identify, manage & share project risks and rewards	Identify, manage & share project risks and rewards	N	N
			Align owner's, designer's & contractor's goals through positive & negative incentives	Y	N
	7	Require project managers/ administrators to be properly qualified	Establish specific minimum qualifications for educ., training & experience for role of project manager on capital projects	N	Y
			Classify the position of State Architect with appropriate minimum qualifications	N	N
	8	Require contractors & construction managers to be properly qualified	Develop criteria to better define qualified contractors & CM's for certification & approval to bid pre-qualification	N	N
	9	Integrate life cycle costing & commissioning on all projects	Integrate life cycle costing & commissioning on all projects	Y	N
			Commissioning should be required on all major projects affecting building envelope, electrical, mechanical & technology systems	Y	N
	10	Establish a uniform evaluation process for design & construction team performance	Implement a uniform evaluation statewide & consolidate collection of this data using OAKS-CI	N	Y
	11	Develop an audit system for compliance with state capital improvements practices	Develop & implement a data collection, compliance & performance audit system for state capital projects	TBD	N
	12	Properly administer contractor retainage	Clarify & develop framework to guide agencies/institutions on possible early & equitable release of retained funds	N	N
13	Increase partnering & collaboration	Develop criteria for usage & integrate facilitated partnering within all phases of a project	N	N	

	No.	Recommendation	Proposition	Legislation?	Executive Order?
TRANSPARENCY	14	Implement master planning across the state enterprise	SAO should collaborate with agencies in their preparation of capital budget requests to OBM	TBD	TBD
	15	Utilize standard contracts & processes for all public construction	Implement a single set of model contract documents for vertical construction across the state	Y	N
	16	Maintain openness and competitiveness of qualifications, documents & specifications	As state implements reforms, qualifications, documents & specifications should remain open & competitive	N	N
	17	Reform public advertising and notification requirements	Notification of bidding opportunities in newspapers should be optional, prescriptive timetables removed & all capital projects announced on the Ohio Business Gateway website	Y	N
	18	Maximize opportunities for EDGE vendors on capital improvement projects	Continue outreach efforts to increase certification & use of EDGE vendors on projects	N	N
	19	Include experienced design & construction professionals within QBS committees	Owners should consider including experienced representatives from the Contracting Authority or industry neutrals in committee	N	N

	No.	Recommendation	Proposition	Legislation?	Executive Order?
EFFICIENCY	20	Leverage project management software (OAKS-CI) on public construction	Seek to reconcile & develop phased implementation of OAKS-CI, beginning with cabinet agencies & interested parties	N	Y
			All agencies & institutions should begin using tool for reporting EDGE participation & collecting/sharing performance evaluations on projects	N	Y
	21	Leverage Building Information Modeling throughout entire project/building lifecycle	Modify current law to allow early contractor involvement in design phase prior to design documents being complete	Y	N
	22	Implement energy efficiency & sustainable (green) standards for public construction	Establish a LEED or LEED equivalent standard statewide for design & construction	N	N
	23	Simplify owner review and approval processes	Re-engineering lengthy processes in early partnering session & leverage technology	N	N
	24	Promptly pay design professionals and contractors	Allow contingency funds to be used for payment of interest on invoices not paid within 30 days & use technology to automate processes & eliminate paper	Y	N
	25	Streamline dispute resolution processes	Use facilitated partnering to identify ADR process & form process for dispute resolution board as final admin. step	N	N

## Recommendations in Detail

### Flexibility Measures

#### Create Flexibility in Project Delivery Methods Based Upon Specific Project Needs

No.	Recommendation	Proposition	Legislation?	Executive Order?
1	Create flexibility in project delivery methods based on specific project needs	Add Construction Manager at Risk as an allowable project delivery method with bid, prompt payment & contracting protections	Y	N
		Add Design/Build as an allowable project delivery method with bid, prompt payment & contracting protections	Y	N

#### Background

The design and construction of capital improvements in Ohio law requires public owners to follow a design-bid-build process. This process provides the owner a completed design prior to involving contractors and bidding the work. For projects that exceed \$50,000, owners are required to bid separate mechanical, electrical and plumbing trade packages if their individual scope of work exceeds \$5,000. While these requirements provide certain advantages to owners, they also limit the state's flexibility in choosing a delivery method based on specific project needs.

More collaborative project delivery methods, such as construction management at risk and design build have been utilized in a majority of other states for some time, and a new generation of even more interactive methods, collectively referred to as Integrated Project Delivery (IPD), are now being explored and implemented in some locales. Collaborative project delivery methods provide for more cooperative relationships among parties while increasing the value to owners through better decision-making and greater efficiency. Collaboration through information sharing early in the design process, when decision-making has its greatest impact on achieving desired outcomes, can positively impact a project.

Traditional delivery and contracting approaches contemplate separate silos of responsibility that, in practice, yield inefficiencies whenever there is a handoff from one silo to another. Collaborative project delivery methods reduce these inefficiencies while maximizing the benefits of new systems

and tools, such as Building Information Modeling, to assist all project stakeholders, and greatly benefit the owner over the life-cycle of the facility. Additionally, collaborative project delivery methods can facilitate early total cost identification and prevent cost overruns through the use of a guaranteed maximum price, which also improves transparency of the entire process. Compensation incentives can be incorporated to align the project participants' goals with the owner's objectives. Examples of collaborative models include: design build, construction manager at risk, and IPD concepts such as project alliances and single-purpose entities.

### *Recommendation*

Multiple project delivery options should be allowed for vertical building construction in Ohio. The state's current laws providing for design-bid-build with multiple prime contractors should remain. In addition, the option to hire a construction manager-as-agent to the owner should remain. To promote the principles of flexibility and collaboration, the state should implement alternative project delivery methods. In particular, the state should proceed to implement the Construction Manager at Risk and Design- Build project delivery methods. These new delivery methods are further described below, and include important bid, payment and contracting protections for trade contractors and sub-contractors.

**Construction Manager at Risk:** In this delivery method the construction manager performs pre-construction services during the design phase, provides a guaranteed maximum price (GMP) for the construction before the design is complete, and holds all the trade contracts during construction. Important elements of this delivery method include:

1. An agency or institution desiring to use this method must be pre-authorized. The State Architect's Office would develop and administer a certification program for agencies and institutions that includes training on the proper use and implementation of this approach. A certification program should be modeled similarly to SAO's existing certification program for local administration at universities.
2. The contracting authority obtains professional design services through a qualification based selection (QBS) process and begins design of the project.
3. The contracting authority selects a CM early in the project, before conclusion of schematic design, through a QBS process that is similar to the design professional selection. CMs are requested to respond to a published request for qualifications (RFQ). The selection committee short lists qualified CMs to be interviewed and the short listed CMs submit a technical proposal for review and consideration. The CMs technical proposal may include a breakdown of their fee, general conditions and contingency amounts. The fee can be broken down further to detail the risk components of providing a GMP to the owner. The selection committee can select a CM based on best value; a weighted combination of qualifications and price.
4. The selected CM can perform pre-construction services for the owner during the design phase, similar to CM as agent.
5. Once the design has been approximately 75% (60%-100%) completed, the CM develops a GMP proposal for negotiation with the owner. If no agreement can be reached on the GMP between the owner and the CM, the contracting authority can either seek the next most qualified CM to complete the project at an acceptable GMP, or continue with the original CM as an owner agent (less the risk component of their fee for not providing a GMP). If the delivery method is transitioned to CM as an owner

agent, the standard design-bid-build processes for bidding and construction with multiple primes would be followed.

6. If there is agreement between the CM and owner on a GMP, the mechanical, electrical and plumbing trades (MEP) are competitively bid based upon complete design documents and opened publicly. The MEP contractors submitting bids are pre-qualified for the specific project through the state, agency and CM. Parties interested in submitting a bid need to verify with the CM that they are certified and approved to bid. If they are not pre-qualified, an expedited appeal process should be provided to those companies.
7. Award of MEP contracts are based on the lowest responsive bid (responsibility already having been determined through the pre-qualification process). This provides protection for the MEP contractors from bid shopping. If all the MEP bids exceed the CMs estimate for that scope of work, the CM has two options to proceed. Either the CM can utilize a portion of the contingency to cover these additional costs, or revise the scope of work and rebid. In addition, the CM is to provide a 100% payment and performance bond for the construction.
8. The CM can self perform any portion of the work, provided it has previously demonstrated to the owner its qualifications to perform such work, submits a separate bid to the owner to perform such work for the price required within its GMP prior to accepting sealed bids from others which shall be publicly opened by the owner. Such work shall be awarded to the CM only if no competing bid is received from a qualified contractor for a number that is less than the established GMP line item number for such work. In addition, contingency funds cannot be used by the CM on self performed work.
9. Progress payments during construction are based on actual costs, up to the GMP, and all of the CMs project accounting is open to the owner for review. In addition, prompt payment and other contractual protections, including expedited dispute resolution process, should be incorporated in the general conditions and apply to all major trades and sub-trades. The form of subcontract will be provided by the state and require the creation of an escrow for payment of amounts due to such subcontractors.
10. If the project exceeds the GMP, the owner's cost is capped at the GMP price, and the CM is fully responsible for those extra costs. If the project is completed with contingency dollars remaining in the project fund, the owner and CM may share in the savings in accordance to the original agreement. Other positive and negative incentives (R #6) can also be incorporated in the agreement to align the CMs interests with the owner's goals and objectives.

**Design-Build (Bridging):** In this delivery method, the design-build entity starts early in the design phase, incorporates the architect of record within the team, and provides a GMP earlier to the owner than in the CM at risk model. The design-build team also holds all trade contracts during construction. Important elements of this delivery method include:

1. An agency or institution desiring to use this method must be pre-authorized. The State Architect's Office would develop and administer a certification program for agencies and institutions that includes training on the proper use and implementation of this approach. A certification program should be modeled similarly to SAO's existing certification program for local administration at universities.

2. The contracting authority obtains professional design services to specifically develop the owner's criteria. The selection of a criteria or "bridging" architect is through a qualification based selection (QBS) process. Responsibilities of this party are to sufficiently describe the owner's criteria for the project and to continue representing the owner during design and construction to confirm the original intent is translated correctly by the design-build team. The criteria architect works exclusively for the owner and cannot, at a later date, transfer to the Design- Build team.
3. The contracting authority selects a design-builder early in the project, through a QBS process. Design-Build teams are requested to respond to a published request for qualifications (RFQ). The selection committee short lists qualified teams to be interviewed and the short listed firms submit a technical proposal for review and consideration. If the owner's criteria are not well defined, the selection may be more heavily weighted towards qualifications based selection. If the owner's criteria are sufficiently defined, the selection can be more price-based. The design-builder's technical proposal includes a breakdown of their fee, general conditions, contingency amounts and if warranted, a GMP. The fee can be broken down further to detail the risk component in providing a GMP to the owner. The selection committee can select a design-build team based on best value – a weighted combination of qualifications and price. In return for receiving the short listed design-builders' work product and value engineering ideas that required extensive preparation and disclosure of unique design solutions, the owner can furnish the non-selected teams a stipend for a serious bid, provided the project moves forward.
4. The selected design-builder can perform pre-construction services for the owner during the design phase, similar to CM as agent, prior to providing the GMP.
5. Once the criteria has been sufficiently described (e.g. completion of schematic design) the design-builder develops a GMP proposal for negotiation with the owner. If no agreement can be reached on the GMP between the owner and the design-builder, the contracting authority can either seek the next most qualified design-builder to complete the project at an acceptable GMP, proceed on alternate pricing basis (whereby the design builder forfeits its "risk fee"), or continue with an alternate project delivery system.
6. If there is agreement between the design-builder and owner on a GMP, the mechanical, electrical, plumbing trades are competitively bid based upon complete design documents and opened publicly. All major trade contractors submitting bids are pre-qualified for the specific project through the state, agency and design-builder. Parties interested in submitting a bid need to verify with the design-builder that they are certified and approved to bid. If they are not pre-qualified, an expedited appeal process should be provided to those companies.
7. Award of MEP contracts are based on the lowest responsive bid (responsibility already having been determined through the pre-qualification process). This provides protection for the MEP contractors from bid shopping. If all the sub-contract bids exceed the design-builder's estimate for that scope of work, or the overall GMP is exceeded, the design-build team has two options to proceed. Either the team can utilize a portion of the contingency to cover these additional costs, or revise the scope of work and rebid. If rebid, the criteria architect verifies the revised scope of work meets the owner's original criteria. In addition, the design-builder is to provide 100% payment and performance bond for the construction.
8. The design-builder can self perform any portion of the work, provided it has previously demonstrated to the owner its qualifications to perform such work, and submits a separate bid to the owner to perform such work for the price required

within its GMP prior to accepting sealed bids from others. These bids shall be publicly opened by the contracting authority. Such work shall be awarded to the design-builder only if no competing bid is received from a qualified contractor for a number that is less than the established GMP line item number for such work. In addition, contingency funds cannot be used by the design-builder on self performed work.

9. Progress payments during construction are based on actual costs, up to the GMP, and all of the design-builder's project accounting is open to the owner for review. In addition, prompt payment and other contractual protections, including expedited dispute resolution process, should be incorporated in the general conditions and apply to all major trades and sub-trades. The form of subcontract will be provided by the state and require the creation of an escrow for payment of amounts due to such subcontractors.
10. If the project exceeds the GMP, the owner's cost is capped at the GMP price, and the design-builder is fully responsible for those extra costs. If the project is completed with contingency dollars remaining in the project fund, the owner and design-build team share in the savings in accordance to the original agreement. Other positive and negative incentives (R #6) can also be incorporated in the agreement to align the design-build team's interests with the owner's goals and objectives.

### **Impact**

Allowing multiple project delivery methods will provide the state increased flexibility in choosing a method based on specific project needs. In addition, the state retains current design-bid-build methods with multiple prime contracts with the option to use a CM as agent. Importantly, both new delivery methods recommended provide protections from bid shopping as well as payment and other contractual protection provisions for sub-trade contractors.

Construction manager at risk and design-build allow earlier contractor involvement during design, which provides the opportunity to start construction earlier and reduce the overall project duration. This can cut 6 to 9 months respectively off a 39 month project, which reduces escalation impacts and provides owners the important beneficial use of the completed facility earlier. An early guaranteed maximum price (GMP) greatly limits the state's risk when implementing capital improvement projects. The owner's administrative costs are reduced with these proposed delivery methods, due to the limited number of owner contracts with project participants. Finally, integrated project delivery methods such as these described are more collaborative and can maximize the benefits and efficiencies provided through use of building information modeling tools.

### **Transformation Plan**

Increasing available project delivery methods and ensuring important specialty trade contractor and sub-contractor protections will require legislative action. If enacted, the state will develop standard model contracts and conditions (R #15) specifically for these new delivery methods, and guidelines for their selection and implementation on capital projects. Prior to finalization of those model documents, the state will provide a process that allows for public comment and input by industry representatives. The State Architect's Office will develop a certification process and guidelines for agencies and institutions to complete in order for them to be authorized to use the new delivery methods. SAO will also develop certification processes for contractors to be used at the state level that can be integrated with project specific qualification provisions as well as CM and

design-builder conditions. This transformation may require the adoption of temporary measures during the development of final processes, documents, and procedures.

**Allow Electronic Procurement of Services and Bidding of Construction**

No.	Recommendation	Proposition	Legislation?	Executive Order?
2	Allow electronic procurement of services and bidding of construction	Seek to reconcile & develop phased implementation of electronic bidding of construction	Depends upon scope	N

**Background**

Currently all public construction is bid with the physical submission of paper bid forms sealed in an envelope. These documents can be submitted by mail prior to the submission deadline, but most often are hand delivered to the contracting authority, and then opened and read in public. A shortcoming of this process is that it typically requires all interested companies to travel to the specified location to submit their bid, and to make sure they have completed the forms accurately without any modifications to the standard documents. If a bid is submitted after the deadline, it is not accepted. If bidders inaccurately submit the documents or make any modifications to the forms, they may be considered non-responsive and their bid rejected by the contracting authority.

**Recommendation**

Develop infrastructure and implement electronic bidding as an option for construction within 2 years. Investigate the ability to integrate this electronic process with OAKS-CI to facilitate statewide implementation and minimize expenses. Explore a phased transition from the current paper submission of bids to a fully electronic submission of bids for all construction.

**Impact**

Technology can help overcome the shortcomings of submitting paper bids by giving wider access and ease in submitting a bid in a timely manner without requiring contractors to travel. In addition, it can assist in preventing contractors from being non-responsive through accidental or even intentional changes to the bid forms or missing data that is required with the bid. Electronic bidding can decrease administration costs, increase competition and ensure accuracy and completeness of submitted bids. It is estimated that the state can save approximately \$250 in administrative costs per bid opening, or at least \$250,000 per year implementing electronic bidding for construction.

**Transformation Plan**

Legislation would enhance the implementation of this recommendation. If enacted, the Department of Administrative Services would investigate technology options on how best to implement electronic bidding for construction statewide. A phased implementation would be planned to move industry participants from paper to electronic bidding within 2 years.

### Create Expedited Process for Small Projects

No.	Recommendation	Proposition	Legislation?	Executive Order?
3	Create expedited process for small projects	Increase minimum threshold for multiple primes to \$200K & maximum threshold for GC delivery method equal to \$600K	Y	N

#### Background

Most capital projects in the state have to be administered the same way and have the same design-bid-build requirements, regardless of their size and complexity. The administrative burden for a \$50,000 project is nearly the same as a \$500,000 or larger project. Other than the number of different building trades a specific project scope of work requires, the scale of a project has no impact on its procedural and contractual requirements. This causes small projects to be more expensive for the state to complete, at a time when the overall trend within the state, given limited capital funds, is to have smaller and smaller projects.

#### Recommendation

Raise the bottom threshold requirement to utilize multiple prime contracts for construction to \$200,000 and allow the use of a **General Contracting** delivery method up to \$600,000 in aggregate project costs. The individual MEP scope of work threshold of \$5,000 should be proportionally raised to \$20,000. These stipulated threshold values would be subject to escalation adjustments in five year intervals based on a recognized construction industry index. The terms "project" and "project cost" should be clearly defined to prevent splitting of a single project to avoid the threshold and to provide clear direction as to how project cost is calculated. Two years after implementation, an independent review should be conducted to evaluate the transparency, accountability and effectiveness of the general contracting delivery method. This delivery method is further described below, and includes important bid shopping protections and payment provisions for trade contractors and sub-contractors.

**General Contracting:** This delivery method follows the design-bid-build process, which involves the general contractor (GC) providing a bid from a completed set of design documents from an architect or engineer. The GC provides a lump sum bid to the owner and holds all trade contracts during construction. Important elements of this delivery method include:

1. The contracting authority obtains professional design services through a qualification based selection (QBS) process and completes the design of the project.
2. The contracting authority may obtain Construction Manager-as-Agent pre-construction services to assist in estimating and providing constructability reviews of the design documents.

3. Once the design documents are completed, the project is competitively bid and opened in public. All GCs submitting bids are pre-qualified for the specific project through the state and agency. Award of trade contracts are based on the lowest responsive bid (responsibility already having been determined through the pre-qualification process).
4. The GC is required at time of bid opening to identify mechanical, electrical and plumbing subcontractors by company name to the contracting authority. It is the requirement that these identified sub-contractors will be used during construction to complete the project. Exceptions to this include the failure or default of a sub-contractor. This provides protection from bid shopping for the major trade sub-contractors. In addition, the GC is to provide a 100% payment and performance bond for the construction.
5. Payments during construction are based on progress of the work according to the approved Schedule of Values. In addition, prompt payment and other contractual protections should be incorporated in the general conditions and apply to all major trades and sub-trades.

**Impact**

Raising the threshold and allowing general contracting delivery method to be used on projects up to \$600,000 will provide agencies and institutions an expedited process for small projects and reduce the state’s administrative burden in managing multiple trade contracts. Additionally, the expedited process for small projects will likely allow EDGE vendors substantially greater access to construction projects – including increased opportunities to serve as a prime contractor.

**Transformation Plan**

These changes will require legislative action. If enacted, the state will develop model contract documents specific for the GC delivery method (R #15) and incorporate this in training for project managers and administrators (R #7). After two years of implementation, an independent review will be conducted to assess the effectiveness of the GC delivery method.

**Streamline Current Law Related to Design and Construction of Capital Improvements**

No.	Recommendation	Proposition	Legislation?	Executive Order?
4	Streamline current law related to design and construction of capital improvements	Consolidate & organize law related to design & construction	Y	N

**Background**

Both the Ohio Revised Code and Administrative Code contain law that is poorly organized, overly prescriptive, and out of date with current industry practices. To better address the needs of the state and clearly communicate with all interested parties, current laws related to design and construction should be systematically coordinated, revised and streamlined.

**Recommendation**

The state should ultimately consolidate and organize all laws regarding design and construction within the Ohio Revised Code and Administrative Code.

**Impact**

Organized and streamlined laws will add clarity and understanding by industry and provide additional transparency to the public.

**Transformation Plan**

Any changes to code will require legislative action. The state should develop a model code that consolidates and clearly organizes all design and constructions related law into one section of the Ohio Revised Code and then mirror that model in the Administrative Code.

**Mitigate Cost Escalation Impacts to Owners and Contractors**

No.	Recommendation	Proposition	Legislation?	Executive Order?
5	Mitigate cost escalation impacts to owners & contractors	Incorporate adjustments for high inflation in standard model documents	N	N

**Background**

During the planning and design phase of projects, all schedule delays directly impact the owner through postponement of the bid date. These schedule impacts are typically caused by lack of master planning, lengthy owner decision making or untimely performance by consultants. Once the capital project is bid, the cost escalation is known to the owner. Sometimes this causes further delays in order to secure additional funding or re-design the project to reduce scope.

The bid price captures all realized escalation to that point in time, as well as any anticipated cost escalation of building materials and systems that might be experienced by the contractor after bid day. Market conditions influence the contractor’s estimated escalation factored into the bid price. Any over estimation of escalation is additional profit to the contractor for taking the risk. Any under estimation of cost escalation reduces the contractor’s profit. During periods of high inflation of certain materials or commodities, contractors may either over estimate to protect themselves or refrain from bidding. In both circumstances, the building owner is negatively impacted.

**Recommendation**

Minimize cost escalation impacts caused by lack of planning by implementing a more robust master planning process for agencies with assistance and collaboration by the State Architect’s Office (R #14). Re-engineer lengthy owner decision processes (R #23) through partnering (R #13). To mitigate inflationary impacts during bidding, develop escalators for specific materials or equipment in the documents that can be utilized to lessen the risk on bidders and decrease contractor’s need to inflate bids. These material escalator concepts can be incorporated in the standard model contracts (R #15).

### *Impact*

Proper upfront planning and budgeting along with simplified owner review and approval processes can eliminate months or years of escalation impacts on complex capital projects. This saves the state time and money. Mitigating the risk held by contractors during periods of high inflation can increase the number of bids received while decreasing the chance of inflated bids.

### *Transformation Plan*

Implement recommended best practices by incorporating them in standardized processes and integrating them in model contract documents.

## Accountability Measures

### Risks & Rewards

No.	Recommendation	Proposition	Legislation?	Executive Order?
6	Identify, manage & share project risks and rewards	Identify, manage & share project risks and rewards	N	N
		Align owner's, designer's & contractor's goals through positive & negative incentives	Y	N

### Background

The current standard contracts have attempted to identify the responsibilities of each party for managing certain project risks, although current state processes do not include the systematic review and identification of project risks that is uniform throughout the state. Known project risks are either transferred to another party or assumed and managed, while unidentified risks are ignored until an event occurs. These events may have significant impact to the project and multiple parties. Some risks may not be managed by the party that is best suited or equipped to properly mitigate those risks. The limited risk identification that is implemented lacks the benefit of involving construction contractors in the process.

In addition, the state currently does not establish project goals and align them with design and construction services compensation. Examples of possible project goals include:

- 1) Completing project on schedule,
- 2) Achieving intended energy and environmental design goals which may include LEED Certification and actual energy consumption after occupancy,
- 3) Management of contingency reserves.

Competing goals and interests of the various project participants create conflicts and decrease the overall value to the state. Currently most agencies and institutions use only negative incentives, through the use of liquidated damages for missed milestone dates. The exception is the Ohio Department of Transportation which has both positive and negative incentives within their contracts for horizontal construction. Some of ODOT's incentives include sharing of savings from accepted value engineering proposals and additional compensation for completing projects ahead of schedule.

### Recommendation

Develop a standard framework to be implemented during an early facilitated partnering session (R #13) with contractors to review and identify all risks specific to the project. This requires increased

collaboration as well as qualified project management staff (R #7) and contractors (R #8) to systematically review project risks. This analysis and management of project risks should be included in an overall audit (R #11) of capital improvement projects to ensure compliance. An integrated project delivery approach (R #1) would better facilitate the implementation of this process early in the project.

Align design professional and contractor goals with owner goals for the project with the use of both positive and negative incentives that tie all parties' performance together for mutual benefit. Rewards should be objectively awarded and not create conditions that may shift focus from quality construction. Alternative project delivery models (R #1) can facilitate the integration of different compensation methods for designers and contractors.

### *Impact*

If project risks are better identified and managed, change orders and claims would be reduced as well as cost escalation mitigated. All of these benefit the state by reducing the cost of capital improvement projects. Potential delays from significant and previously unknown risks are also mitigated, allowing the owners to benefit from using the completed project.

A balanced allocation of project risks to parties most capable of managing or mitigating those risks reduces both cost and time impacts to owners. Alignment of goals through the strategic use of partnering and incentives will create overall value to the state by increasing the likelihood that the owner's capital improvement objectives will be achieved on all projects. ODOT has experienced great success with implementing incentives tied to owner goals. The state's schedule, budget and quality objectives can all benefit through the strategic use of incentives.

### *Transformation Plan*

Implement a facilitated partnering process throughout the duration of a project (R #13) that is incorporated in uniform contracts (R #15) for all project participants to collaborate on the identification and management of project risks. Develop a training program to ensure project management staff for the state is qualified (R #7) as well as criteria for contractors (R #8) if those recommendations are enacted.

Alignment of goals across all project participants through collaboration and use of positive and negative rewards will require legislative action. If new law is enacted, standard contract terms and conditions would be rewritten to accommodate the changes.

### Proper Qualifications for Construction Administration

No.	Recommendation	Proposition	Legislation?	Executive Order?
7	Require project managers/ administrators to be properly qualified	Establish specific minimum qualifications for educ., training & experience for role of project manager on capital projects	N	Y
		Classify the position of State Architect with appropriate minimum qualifications	N	N

#### Background

In order to effectively lead capital projects on behalf of the state, managers and administrators employed by the state should be competent and meet minimum qualifications. Currently the state has no minimum requirements of education, training or experience in order to manage a capital design and construction project. This lack of minimum qualifications for state employees managing complex capital projects places the state at risk. In addition, the position of State Architect is currently unclassified with high turnover in recent decades, leading to a sense of instability and lack of trust within the design and construction industry.

#### Recommendation

The state should establish position specific minimum qualifications for education, training and/or experience that all project managers administering capital improvement projects hold, regardless of the various personnel classifications and position descriptions utilized across the state. The minimum qualifications should allow employees alternative paths in education and experience to achieve the standard. Example areas of study include architecture, engineering, construction management or project management.

The state should classify the position of State Architect with appropriate minimum qualifications to ensure that this role is filled by highly qualified candidates that have the necessary technical and administrative skills required, while allowing the position the ability to engage industry over the long term on important issues.

#### Impact

Establishing a uniform qualification for administering complex and expensive building projects will better protect the state and result in having higher quality projects that are completed on time and within budget. Having the State Architect position filled by only high qualified candidates that can establish a long standing relationship and level of trust with the design and construction industry will provide a needed sense of stability that has been lost in recent decades.

### **Transformation Plan**

This recommendation would be enhanced by an Executive Order. If the recommendation is enacted, the state would research all classifications and position descriptions utilized by the various agencies and institutions administering capital projects and develop a common position specific minimum qualification for the role of project manager. Existing employees that do not currently meet the new standard should be provided training opportunities to meet the qualifications for managing capital improvement projects for the state. With concurrence, the Department of Administrative Services will follow the established steps by Human Resources to classify the State Architect position.

### **Proper Qualifications for Contractors & Construction Managers**

No.	Recommendation	Proposition	Legislation?	Executive Order?
8	Require contractors & construction managers to be properly qualified	Develop criteria to better define qualified contractors & CM's for certification & approval to bid pre-qualification	Depends upon scope	N

### **Background**

The state currently has no requirements that general trade contractors and construction managers meet minimum qualifications, maintain a license, or achieve a certification in order to work on state capital projects. Mechanical, electrical and plumbing contractors currently have to be licensed in Ohio.

With the exception of the Ohio Department of Transportation (ODOT), agencies and institutions competitively bid work to all interested parties. ODOT on the other hand pre-qualifies all bidders prior to competitively bidding projects.

### **Recommendation**

Develop criteria to better define a qualified contractor and use these criteria within a process to pre-qualify contractors for a specific project prior to bidding alternative delivery methods. The process should include a general or financial review by the state of interested contractors, followed by project specific criteria for approval to bid on an individual project. It is important to include past performance on state projects (R #5) as part of this evaluation. Other criteria used in the evaluation of interested bidders should be developed cooperatively with industry representatives. Consensus from contractors on the panel was to offset the state's cost of administering a certification and approval to bid pre-qualification process by assessing a certification fee to all applicants. Licensing fees already paid for by certain trades should be considered (deducted) when developing a fee system.

**Impact**

Better qualified contractors to perform construction results in higher quality work and increased value to the state. Quality of a completed project impacts the operating and maintenance costs of the facility.

**Transformation Plan**

Develop common criteria and implement through a certification and approval to bid pre-qualification process.

**Integrate Life-Cycle Costing & Commissioning on All Projects**

No.	Recommendation	Proposition	Legislation?	Executive Order?
9	Integrate life cycle costing & commissioning on all projects	Integrate life cycle costing & commissioning on all projects	Y	N
		Commissioning should be required on all major projects affecting building envelope, electrical, mechanical & technology systems	Y	N

**Background**

Life cycle costing estimates the total cost of a system during the life of a building, including anticipated operating and replacement costs. This process allows owners to make informed decisions during design when trying to select the most economical system over the life of the facility. This practice has long been required by code, but its implementation across the state has been inconsistent. Design standards developed by owners typically incorporate life cycle costing within the standardized systems and materials, such as the Ohio School Design Manual.

Commissioning is the process of using an independent third party to test and verify that building systems perform and operate at maximum efficiency and effectiveness as intended for the owner. This process results in lower operating and maintenance costs for owners once the building is turned over to them to manage. While the upfront cost of implementing commissioning is a capital expense, the resulting savings are in operational expenses. The typical payback period for commissioning services is less than 5 years, while the ongoing value to the state continues over the life of the facility. While commissioning is considered a best practice, it is not currently a requirement.

**Recommendation**

Life cycle cost estimating should be integrated as a best practice within value engineering. It should also be considered when evaluating the level of energy efficiency and sustainability to be achieved on a capital improvement project (R #22). Current language within code describing life cycle cost estimating should be simplified and the current administrative process eliminated.

Commissioning should be required on all major construction and renovation projects affecting the building envelope, electrical, mechanical and technology systems. Projects that will benefit the most from commissioning are those in which these systems are more than 50% replaced or renovated. These upfront costs should be included in an agency’s master plan (R #14).

**Impact**

Life cycle cost estimating used in conjunction with value engineering can provide owners with sufficient information to make important decisions that have long lasting operational impacts to the state. This can maximize the use of capital funds to minimize the need for operating funds over the life of a facility. Likewise, commissioning can ensure the designed systems operate at their peak efficiency at the time the building project is turned over to the owners, which reduces the state’s energy consumption. While the initial costs of commissioning are in the range of \$0.50-\$1.00 per square foot, the payback period through operational savings is within a few months to three years.

**Transformation Plan**

The recommendation to streamline life cycle costing and the requirement to use commissioning on all major capital projects would be enhanced by legislative action. If new legislation is enacted, the state would incorporate the minimal initial costs within an agency’s master plan budget (R #14) and integrate the process as appropriate within the standard contracts and conditions.

**Uniform Evaluation Process for Design & Construction Teams’ Performance**

No.	Recommendation	Proposition	Legislation?	Executive Order?
10	Establish a uniform evaluation process for design & construction team performance	Implement a uniform evaluation statewide & consolidate collection of this data using OAKS-CI	N	Y

**Background**

Currently the state utilizes several different evaluation forms and processes to document past performance of design and construction team members. All of these evaluations are presently in paper format or discrete electronic files that cannot be easily queried or searched across the enterprise. The state’s ability to share common past performance results affects the quality of future consultant selections and contractor responsibility reviews. Beyond the compilation of evaluation data, there is no formal organization of human resources to share information.

In addition, the state does not uniformly request project participants to evaluate the contracting authority’s performance in administering the project. This is a lost opportunity for the state to seek feedback for continuous improvement.

Presently Ohio’s Administrative Knowledge System (OAKS), designed to be an enterprise solution for the state, has a module for Capital Improvements (OAKS-CI). OAKS-CI is a web based project management system designed to meet the needs of state projects. This system has been designed

to be the central depository of all project information, including performance evaluations. While OAKS-CI has been designed to serve the entire state, its use is currently only optional for agencies and institutions. Currently in the final stages of implementation, OAKS-CI is expected to be fully functional by summer 2009.

**Recommendation**

Develop a uniform evaluation format, to the greatest extent possible, for all project participants. Consolidate the collection of this data for its beneficial use by all agencies and institutions, and make this information easily available to the public. OAKS-CI should be the common tool to collect and share this information across the state (R #20). Organize methods to facilitate intra-agency communication when reviewing past performance in evaluating a vendor’s responsibility.

**Impact**

The various contracting authorities across the state could use this information when selecting design professionals or evaluating contractor performance. Qualified designers and contractors that have proven high performance in the past will increase the likelihood of project success as well as quality and timeliness of services (R #8).

Seeking feedback regarding the contracting authorities’ performance on common metrics will provide those organizations key information for their continuous improvement, as well as inform parties where additional training will have the greatest impact (R #7).

**Transformation Plan**

This recommendation would be enhanced by an Executive Order. If enacted, the state would take steps to modify OAKS-CI to ensure consistent collection and sharing of information can occur across the enterprise.

**Develop an Audit System for Contracting Authorities to Ensure Compliance with State Capital Improvement Practices**

No.	Recommendation	Proposition	Legislation?	Executive Order?
11	Develop an audit system for compliance with state capital improvements practices	Develop & implement a data collection, compliance & performance audit system for state capital projects	Depends upon scope	N

**Background**

The state has no overall audit program to ensure that each contracting authority is complying with established practices, processes and standard contracting requirements. This omission has the potential of creating differing conditions resulting in confusion for businesses seeking and doing work for the state.

In addition, the state does not currently measure and track performance with regard to project goals. Common performance metrics should be established, tracked and reported periodically to ensure the effectiveness of the state’s processes and procedures and to focus on continuous improvement.

**Recommendation**

Develop a compliance and performance audit system for state capital improvement projects. Consideration should be given to how auditors can access registered complaints and guidance on how to deal with violations and associated ramifications. Train project management staff within the state on the compliance and performance measures to ensure common understanding and goals for continuous improvement.

**Impact**

The identification of non-compliance and/or low performance through a standardized audit system allows project participants to identify areas for increased attention and continuous improvement.

**Transformation Plan**

This recommendation may require legislative action depending upon the party conducting the audit. Options for independent parties to conduct the audits would be explored with the State Auditor’s Office and Office of Budget and Management. If new law is enacted, the state would then create necessary administrative rules, directives, etc. that follow the law change.

**Properly Administer Contractor Retainage**

No.	Recommendation	Proposition	Legislation?	Executive Order?
12	Properly administer contractor retainage	Clarify & develop framework to guide agencies/institutions on possible early & equitable release of retained funds	N	N

**Background**

The state currently retains 8% of the first 50% of labor costs paid and places these funds in an escrow account. This practice is done by owners to ensure that sufficient funds remain near the end of a project to incentivize a contractor to complete the outstanding work items. However, there are cases where the amount of retainage is not sufficient for its intended purpose and other situations where the amount retained may create a financial hardship to the contractor. After substantial completion the contractor may request the owner release a portion of these funds.

In order to close out a capital project, a significant amount of project documentation needs to be compiled and turned over to owner s for their use when operating and maintaining the facility. These important documents typically are assigned a value in the contractor’s “schedule of values” at the start of construction. These dollars are not released until the documents have been accepted by the owner.

**Recommendation**

While everyone understands the owner’s need for retainage, it is recommended that the state evaluate its policies on how to fairly balance those needs with contractors that have completed early packages of work that could be partially or fully closed out and a fair amount of retained funds released. In follow up to this report, a small task force should be formed to fully investigate and further develop specific recommendations.

**Impact**

Demonstrating a balanced and fair approach to releasing retained funds to contractors that have completed work could achieve the owner’s intent while decreasing the contractor’s financial burden. With less financing costs, contractors have less need to include those costs in their bids, directly saving the state money on construction.

**Transformation Plan**

Review policies and procedures to further clarify and develop a framework to guide agencies and institutions on the possible early release of retainage and implement training for common understanding and application of those policies.

**Increase Collaboration and Partnering Among State Owners and Designers and Contractors**

No.	Recommendation	Proposition	Legislation?	Executive Order?
13	Increase partnering & collaboration	Develop criteria for usage & integrate facilitated partnering within all phases of a project	N	N

**Background**

The construction industry is adversarial in nature. This is partly due to the contractual relationships associated with delivery methods and the lack of unified goals for all parties. These obstacles take management’s time away from proactively managing the relationships between project participants.

With the exception of the Ohio School Facilities Commission (OSFC), a facilitated partnering process has only been sporadically used within the construction phase of projects. The OSFC has leveraged the benefits of this process across all phases of a project. By learning how to work effectively together, team members communicate more and jointly resolve problems. This in turn reduces project impacts such as schedule delays and cost increases.

**Recommendation**

Integrate facilitated partnering process within all phases of a project. Establish a threshold for the size of projects that would require partnering, while implementing at the discretion of the contracting authority on smaller projects. Incorporate facilitated partnering within all standard contract forms (R #15).

### *Impact*

Partnering has the potential of positively impacting many aspects of capital projects including:

- The identification and balancing of project risks and rewards (R #6),
- Fully leveraging Building Information Modeling among the entire team (R #21),
- Implementing energy efficiency and sustainability standards on specific projects (R #22),
- Simplifying the owner's review and approval processes (R #23),
- Reducing change orders and claims through streamlined dispute resolution (R #25),
- Increased use of value engineering - facilitating master planning (R #14),
- Establishing an environment for the fair and equitable treatment of contractors while maximizing EDGE participation (R #18),
- Improved collaboration and coordination of building trades and systems, and,
- Mitigation of cost escalation impacts.

Partnering is most effective when facilitated by professional, experienced facilitators. The cost for these project length services ranges between 0.1-0.3% depending on the size and complexity of the project. These minimal costs are easily offset with increased efficiencies and fewer disputes during the project.

### *Transformation Plan*

This recommendation would be enhanced by adequately budgeting for capital projects (R #14) in addition to incorporating the processes within all standard contracts. Training of contracting authorities on the intent of partnering and how it can be utilized as an important tool for implementing best practices on projects would further the overall benefit to the state.

## Transparency Measures

### Implement Master Planning Across the State Enterprise

No.	Recommendation	Proposition	Legislation?	Executive Order?
14	Implement master planning across the state enterprise	SAO should collaborate with agencies in their preparation of capital budget requests to OBM	Depends upon scope	Depends upon scope

#### *Background*

Currently each agency that maintains and operates its own facilities independently develops and submits a 6-year capital plan to the Office of Budget and Management each biennium, which describes its anticipated capital funding needs. The process in developing these independent capital requests varies widely and therefore does not include a consistent list of costs required for a capital improvement project. Given limited capital resources, the overall funding to an individual agency is typically less than requested. The agency is then tasked with allocating fewer dollars over its requested capital projects. This is done either by attempting to do the same scope of work for less money, or creating phased projects that extend over multiple funding biennia.

An exception to this practice is the Ohio School Facilities process for master planning school districts and individual school buildings, where legally required school design standards do not permit budgets to be reduced. In addition, universities with support from the Board of Regents have robust master planning processes for each campus.

Projects that are under-funded from the beginning have extreme pressure to cut elements that may ensure a successful project (like partnering) or reduce overall lifecycle costs of the facility (like energy and environmental goals and commissioning). Projects that are phased to align with future funding opportunities are much more costly due to the complex nature of phased construction and the impact of cost escalation.

#### *Recommendation*

Best practices indicate that master plans should be thoroughly developed for each agency requesting capital funds that incorporate such items as:

- Existing facility condition assessments,
- Current operations assessment,
- Identification of capital needs from business goals,
- Clear specification of individual project scopes of work,
- Thorough estimates of all project costs,
- Realistic schedule durations, and,
- Project prioritization methodologies aligned with business goals of the agency and state.

To improve the accuracy of individual project budgets and incorporate master planning best practices, the State Architect’s Office should collaborate with agencies in their preparation of capital budget requests submitted to OBM.

**Impact**

The collaboration of SAO and agencies during the master planning and project budgeting process will provide better information to OBM when developing the state’s biennial capital budget. This change has the potential to help mitigate project schedule delays and costly escalation impacts during the design and construction of projects. Better decision making aligned with agency and state priorities will maximize the benefit of every capital dollar appropriated.

**Transformation Plan**

Improving state agency capital planning through collaboration with SAO would be enhanced by legislative action. In addition, SAO can be an immediate resource to state agencies and OBM in their review of upcoming capital requests.

**Utilize Standard Contracts & Processes for All Public Construction**

No.	Recommendation	Proposition	Legislation?	Executive Order?
15	Utilize standard contracts & processes for all public construction	Implement a single set of model contract documents for vertical building construction across the state	Y	N

**Background**

The State Architect’s Office, with approval from the Attorney General’s Office, currently establishes and maintains standard contracts for design and construction of state facilities for various agencies and institutions. Some agencies and institutions are exempt from these standards and they have developed their own contracts for their purposes. These state agencies and institutions include: Ohio Department of Natural Resources, Ohio School Facilities Commission, Adjutant General, Ohio Cultural Facilities Commission, Capital Square Review and Advisory Board, Ohio Building Authority, state-funded community colleges, and school districts that are not funded by OSFC. In addition, counties, townships, villages, joint fire districts and quasi-governmental entities use contracting standards that vary from the state’s documents. The Ohio Department of Transportation’s horizontal construction (roads and bridges), with its extensive use of unit price bidding, is an exception that seems to warrant differentiation from vertical building construction contracting. While these contracts are similar to each other, they do not necessarily have a common baseline, which hinders common understanding within the industry.

**Recommendation**

The state should implement a single set of model contract documents for vertical building construction. These standard documents should include: architect/engineer agreements, construction manager agreements, trade contractor agreements and general conditions for

contracting. To accommodate important elements that are unique to an individual agency or institution, supplemental conditions should be reviewed by SAO and approved by the AGO for incorporation within all project documents for those specific entities. Supplemental conditions should be limited to only necessary and unique requirements of an agency. Training should be provided to agencies and institutions to facilitate common understanding and interpretation of the model documents across the state.

**Impact**

Implementing standard contracts and processes for all public construction of vertical building projects funded by the state will facilitate common understanding within the industry. This will increase transparency while reducing confusion by companies doing business with the state. Administrative costs should be reduced by centralizing the development and updating activities of these common documents. In addition, best practices and changes in law can be implemented more efficiently with standard documents that are used statewide.

**Transformation Plan**

Legislative action is required to implement these changes. If new law is enacted, SAO and AGO should work cooperatively with currently exempt state agencies and institutions to develop model contract documents and any necessary agency or institutional specific supplemental conditions. Both SAO and AGO should periodically provide training to agencies and institutions as necessary to gain a common understanding and interpretation of the standard contracts and future updates.

**Maintain Openness and Competitiveness of Qualifications, Documents and Specifications**

No.	Recommendation	Proposition	Legislation?	Executive Order?
16	Maintain openness and competitiveness of qualifications, documents & specifications	As state implements reforms, qualifications, documents & specifications should remain open & competitive	N	N

**Background**

The state and all companies interested in doing business with the state benefit from open and competitive selection and bidding processes. To ensure these processes are working, transparency is critical. Material and system technical specifications are typically written by design professionals with the general guideline that at least 3 different vendors are capable of supplying an equivalent product for any specified item for inclusion in the project. These design professionals are also responsible for determining if an alternative product is equivalent to the basis of design. Some owners have developed design standards for their facilities, but these standards typically do not identify an individual or sole source product to be used. In some limited circumstances, sole sourcing a specific product is beneficial to the state and owner for ease of operation and maintenance of the facility. In these unique cases the design professional justifies the use of these sole sourced materials to the contracting authority for its approval.

**Recommendation**

The Panel agrees current laws, policies and practices have provided an adequate framework that protects the public and ensures fair transparent competition. As the state implements any reforms, qualifications, documents and specifications should remain open and competitive.

**Impact**

Open and competitive design specifications and processes ensure that the value received by all tax dollars spent on capital projects are maximized.

**Transformation Plan**

The state will review all proposed reforms to make sure that the openness and competitiveness of the process and documents are protected.

**Reform Public Advertising and Notification Requirements**

No.	Recommendation	Proposition	Legislation?	Executive Order?
17	Reform public advertising and notification requirements	Notification of bidding opportunities in newspapers should be optional, prescriptive timetables removed & all capital projects announced on the Ohio Business Gateway website	Y	N

**Background**

Acquisition of construction management services and public construction opportunities must currently be advertised in a major circulated newspaper within the county of the project’s location. These legal advertisements are expensive and a duplication of effort when seeking companies interested in performing construction services for the state. There are also very prescriptive timelines and number of repeated advertisements that have to be followed when publishing construction service opportunities in newspapers. On the other hand, professional design services are not required to be publicly advertised in a print newspaper or follow any prescribed timetable.

Industry practice is to distribute these competitive selection and bidding opportunities using many simultaneous channels of communication. These include posting the opportunities on multiple websites managed by the state or contracting authority, notifying commercial clearing houses such as Builder’s Exchange and McGraw-Hill/Dodge, sharing the bid documents with major printing companies, sending faxes to large distribution lists of interested contractors, or making many individual phone calls to generate interest in the project. In addition, the Ohio Department of Development’s Minority Contractors and Business Assistance Program offices and Procurement Technical Assistance Centers distribute the bid information to interested parties. These practices

occur prior to the bidding phase to seed the market as well as during the bidding process to ensure as large a group of interested parties as possible. It is well understood to be in the owner’s best to increase the pool of interested contractors in order to receive the most competitive price for the work.

While newspaper advertising is just one channel of communication, it is the most costly means of notification, has very prescriptive requirements, and is no longer the best means of seeking interested parties.

**Recommendation**

Legal requirements to advertise construction management services and construction bidding opportunities in newspapers should be optional. The use of newspapers to notify interested parties of construction opportunities should be left to the discretion of the contracting authority. In addition, the prescriptive timetable requirements should be removed from law. Aligned with the Governor’s directive, all business opportunities, including construction, are to be announced on the state’s Business Gateway website, a central web portal for all opportunities to do business with the state.

**Impact**

Utilization of communication channels for announcing construction opportunities can be based on effectiveness of reaching interested parties, rather than meeting legal requirements. The state can use more effective means at much less cost. Many frequently used and effective alternatives in the industry are free. With current advertising costs per project, the estimated savings is over \$1 million per year to the state.

**Transformation Plan**

Implementation would require a change in law. If enacted, all state funded capital projects can be advertised on the Ohio Business Gateway website, in addition to all other commonly used methods and channels. Newspapers can continue to be used at the discretion of the contracting authority.

**Maximize Opportunities for EDGE Vendors On Capital Improvement Projects**

No.	Recommendation	Proposition	Legislation?	Executive Order?
18	Maximize opportunities for EDGE vendors on capital improvement projects	Continue outreach efforts to increase certification & use of EDGE vendors on projects	N	N

**Background**

To encourage diversity and growth of small companies, the state has established a race and gender neutral program called EDGE (Encouraging Diversity, Growth and Equity) to be used on all state capital construction projects. The program has currently established a uniform goal of 5% EDGE company participation on construction projects for all agencies and institutions. This includes

architectural and engineering services as well as construction managers and trade contractors. A company that qualifies as an EDGE firm must apply to the DAS Equal Opportunity Division to become certified as an EDGE company. Unlike goods and services procured by the state, there are no MBE set-asides for construction. While the 5% participation level is a goal, a good faith effort to achieve the goal is required. If documented good faith efforts do not fully achieve the goal, consultants and contractors may request a waiver from the contracting authority.

**Recommendation**

Given the current limited availability or capacity of EDGE vendors in certain regions and specialties, the state needs to continue outreach efforts to notify eligible firms to become certified and connecting these firms in mentoring relationships with other businesses through networking opportunities. The state should also investigate other delivery methods (R #1) in which selection of vendors are based on best value rather than low bid. This may more effectively accomplish the state’s overall goal of growing EDGE businesses. The expedited process outlined in (R #3) will make it easier for EDGE vendors to participate in state capital projects. (R #3) will also provide opportunities that currently don’t exist for EDGE vendors to gain prime contractor experience.

**Impact**

The development of small businesses drives the growth of employment and the state’s overall economy. Encouraging diversity and equity within these small companies through public policy provides equal opportunity across the state. Within the construction industry specifically, the need for qualified trade contractors working in the field will be increasing in the future. Developing today’s small businesses is critical for building the capacity to fulfill tomorrow’s increasing business needs within the building trades.

**Transformation Plan**

The state will continue to seek out EDGE vendors and educate them on the certification process and how to do business with the state. EDGE participation will continue to be monitored and compared with goals.

**Include Neutral Industry Professionals On Qualifications Based Selection Committees**

No.	Recommendation	Proposition	Legislation?	Executive Order?
19	Include experienced design & construction professionals within QBS committees	Owners should consider including experienced representatives from the contracting authority or experienced neutrals from other contracting authorities in committees	N	N

### ***Background***

Professional services are acquired by the state through a qualifications based selection (QBS) process. These services include architectural, engineering, commissioning, construction management, and other consulting specialties. The QBS process begins with a publicly advertised request for qualifications (RFQ). The owner then reviews the qualifications, rates these submissions and short lists firms to be interviewed. After the interview process is completed, the committee of owner representatives ranks the firms and identifies the most qualified firm. Negotiation of compensation with the firm begins after selection. If the parties cannot come to mutual agreement during the negotiation, the owner can terminate negotiations and begin discussions with the next most qualified firm that was identified from the interviews.

To conduct this process, the state forms a committee of owner representatives. This may include representatives from the contracting authority as well as user representatives. If the contracting authority is not included in these committees, the owner may not have the technical background and experience in the design and construction industry to make an informed decision. Likewise, if the committee members lack industry knowledge and experience, their decisions may be more parochial in nature and influenced by local politics, rather than qualifications of the proposed team to perform the specific service.

### ***Recommendation***

The owner should consider including experienced design and construction representatives from the contracting authority (R #7) or experienced neutrals from other contracting authorities within QBS committees. In addition, all state owner representatives or contracting authorities should provide more constructive feedback to industry participants that submitted qualifications after the process has been completed.

### ***Impact***

Including experienced staff knowledgeable in the industry or neutral industry representatives can lead to more effective and fair determination of the most qualified professional in a QBS process. Better or more clear feedback on the decision making process that led to a selection is valuable to both successful and non-successful firms when preparing for future selections. This feedback will lead to higher quality submissions and interviews that provide owners the best opportunity to select the most qualified firm for an individual project.

### ***Transformation Plan***

Contracting authorities should notify and advise owner representatives to consider these recommendations when forming selection committees. They should also educate or advise their staff and owner representatives on the importance and benefit of providing constructive feedback to the industry participants after a selection has been determined.

## Efficiency Measures

### Better Manage Construction Project Information With Enterprise Project Management Software

No.	Recommendation	Proposition	Legislation?	Executive Order?
<b>20</b>	Leverage project management software (OAKS-CI) on public construction	Seek to reconcile & develop phased implementation of OAKS-CI, beginning with cabinet agencies & interested parties	N	Y
		All agencies & institutions should begin using tool for reporting EDGE participation & collecting/sharing performance evaluations on projects	N	Y

#### **Background**

Project management software enables participants to better manage project communication and document approvals during design and construction. The utilization of technology to manage the flow of project information increases its accuracy and speed of common business processes. Currently this information is managed by a myriad of discrete and incompatible systems and processes.

Ohio’s Administrative Knowledge System (OAKS), designed to be an enterprise solution for the state, includes a module for Capital Improvements (OAKS-CI). OAKS-CI is a web based project management system designed to meet the needs of state projects, while allowing flexibility to align with each agency or institution’s approval processes. The tool also includes a centralized method of collecting and reporting performance evaluations of project team members. This enterprise wide system is currently implementing business processes within pilot projects during 2008-09, with full functionality planned for summer 2009. While OAKS-CI has been designed to serve the entire state, its use is currently only optional for agencies and institutions.

#### **Recommendation**

The state should implement a phased adoption of OAKS-CI on all capital improvement projects beginning with cabinet level agencies and all other interested parties. This will allow the industry to learn and adapt to utilizing the new technology while the group of users grow over time. All agencies and institutions should be required to use OAKS-CI for reporting EDGE (Encouraging Diversity Growth and Equity program) participation on capital projects, as well as sharing all

project team performance evaluations (R #10), as soon as the tool is completed and available for use state wide.

**Impact**

It is estimated that OAKS-CI will save the state over \$2 million a year by reduction of project document printing and mailing costs alone. OAKS-CI will provide the state a rich data base of project information that can be easily shared across the state. In addition, the technology will allow business processes to be streamlined, duplication of data entry eliminated, and accuracy increased. If electronic bidding were to be allowed (R #2); OAKS-CI should be under consideration as the integrated platform to facilitate that process.

**Transformation Plan**

The system will continue to implement business processes on pilot projects during the first half of 2009 with full implementation with agencies and interested parties during 2009-10. Reporting of EDGE participation and performance evaluations can be implemented during second half of 2009 by all agencies and institutions.

**Utilize Building Information Modeling (BIM) Throughout Project/Building Lifecycle**

No.	Recommendation	Proposition	Legislation?	Executive Order?
21	Leverage Building Information Modeling throughout entire project/building lifecycle	Modify current law to allow early contractor involvement in design phase prior to design documents being complete	Y	N

**Background**

During the past 40 years the total non-farm labor productivity of all industries more than doubled in this country, according to US Department of Commerce, Bureau of Labor Statistics. In contrast, the construction industry has significantly lagged these gains during the same time period. Technology has been greatly leveraged by all industries to maximize productivity. Due to the disjointed nature of the construction industry, these same gains have not been achieved.

For the first time in the construction industry, Building Information Modeling (BIM) has the capability of unifying the parties to leverage this powerful technology platform while creating additional value to building owners. The technology allows all project participants (architects, engineers, contractors and suppliers) to collaborate in developing a 3-dimensional computer model of the capital project. This enables the team to identify system conflicts within the design prior to construction. It also provides the owners with a database rich with building specific information that will aid in their maintenance and operation of the completed project. BIM is also capable of assisting with estimating and scheduling projects.

The full benefits of BIM, which requires early collaboration by contractors and suppliers, cannot be realized within Ohio’s current regulatory framework which requires that the design documents be 100% complete before contractor bidding and involvement.

**Recommendation**

Modify current law to allow early contractor involvement during design phase prior to the design documents being complete. While this change allows for various project delivery methods, it does not require any single delivery method or eliminate the use of multiple prime contracting. This does necessitate increased collaboration between all project participants. If current law is not changed, architects and engineers should still be encouraged to utilize BIM technology during the design phase in the execution of their work.

**Impact**

Allowing a framework for early contractor involvement in design provides the state higher quality documents in less time which reduces conflicts, change orders and claims. In addition, the owners benefit from a richer database driven building model to facilitate the long term management and operation of the completed facility. An electronic building model also provides the team the opportunity to more easily explore energy efficient alternatives (R #22) while using life cycle costing (R #9) and value engineering.

**Transformation Plan**

If alternative delivery methods are implemented (R #1), the state will both encourage the adoption of BIM through the qualifications based selection processes and integrate the sharing of this electronic model across team members within model contracts (R #15).

**Implement Green Building Standards for Public Construction Projects**

No.	Recommendation	Proposition	Legislation?	Executive Order?
22	Implement energy efficiency & sustainable (green) standards for public construction	Establish a LEED or LEED equivalent standard statewide for design & construction	N	N

**Background**

Pressure from rising energy costs and environmental needs are requiring building owners to maximize the efficiency and sustainability of our built environment. Goals to reduce the state’s energy consumption over the next several years have also been established. The United States Green Building Council has established criteria to rate the energy efficiency and sustainability of new and renovated facilities. This system referred to as LEED (Leadership in Energy and Environmental Design) has several levels of certification indicating its excellence in energy and environmental design. In 2007, the OSFC established a minimum LEED goal of Silver for all new K-12 schools in Ohio. While individual agency and institution projects may state discrete project goals

relating to green standards, there are presently no statewide standards to aggressively address these matters.

**Recommendation**

The state should establish a LEED or LEED equivalent standard for design and construction across the state, similar to that of OSFC. A uniform standard would provide for a common understanding for design professionals and contractors seeking and doing work for the state. As technology and systems improve, the standards should incrementally adjust to provide the state with the maximum benefit of energy and environmental savings.

**Impact**

This recommendation will enable the energy initiatives established in HB 251 (127<sup>th</sup> General Assembly) to be successful. A minimum energy design standard that increases energy efficiency and sustainability of state facilities will have a direct impact on future energy and water consumption, saving the state significantly in operating costs during the life of a building. Implementation of higher design standards will have initial premium cost in the range of 1-7%, with back-end operational savings that will pay back this investment over the course of several years.

**Transformation Plan**

The Department of Administrative Services is to develop energy standards and codify them in administrative rules after using the standard public hearing process.

**Simplify Owner Review and Approval Processes**

No.	Recommendation	Proposition	Legislation?	Executive Order?
23	Simplify owner review and approval processes	Re-engineering lengthy processes in early partnering session & leverage technology	N	N

**Background**

An owner’s major responsibilities when conducting a capital improvements project are to review the work of others, provide approval to proceed and approval of payment requests. The bureaucratic nature of governmental entities and institutions have created numerous and lengthy approval processes. Some of these processes may require as many as six to ten signatures. These lengthy processes greatly impact the progress of project design and construction. While technology can help facilitate the transfer of documents to be approved by owners, it cannot fully solve the problem without significant changes to the owner’s delegation of authority and approval process.

**Recommendation**

Integrate a review of the owner’s approval process at the beginning of a project and develop ways to re-engineer lengthy processes with the goal of having the fewest possible signatures of approval

from the state by employees that have the best knowledge of the contract and can be held accountable (R #7). This review should be incorporated into facilitated partnering sessions (R #13). In addition, technology should be used to the greatest extent possible to speed up standard processes (R #20) while exploring the use of concurrent rather than sequential approval processes. This includes timely owner’s approval to ensure prompt payment of design professionals and contractors (R #24).

**Impact**

Timely owner review and approval of project documents will decrease delays and reduce the impact of escalation on capital projects, which will provide more value to the state. In regards to prompt payment (R #24), timely owner review and approval mitigates interest payments on overdue invoices.

**Transformation Plan**

Revise standard processes in order to integrate the use of facilitated partnering sessions (R #13) and incorporate this review during those meetings with the project team. Include these process changes in training programs for project managers and administrators working as employees for the state (R #7).

**Promptly Pay Design Professionals and Contractors**

No.	Recommendation	Proposition	Legislation?	Executive Order?
24	Promptly pay design professionals and contractors	Allow contingency funds to be used for payment of interest on invoices not paid within 30 days & use technology to automate processes & eliminate paper	Y	N

**Background**

Given the owner’s lengthy approval process and/or lack of shared urgency, design professionals and contractors routinely wait longer than 30 days to receive payment for services rendered, and receiving the interest penalty that is due to them is difficult to do. Cash flow, especially for small businesses, is vital to staying in business. Many companies cannot afford to finance the state’s project while waiting for payment. These result in either lack of interest in bidding state work or increased bid prices (1%-3%) to offset these issues of slow payment.

**Recommendation**

Simplify the owner review and approval process (R #23). Likewise, use technology to eliminate the need to submit paper invoices for payment (R #20). In addition, simplify process for contractors to receive interest on money due them that has been properly submitted on an invoice and not paid within 30 days of receipt by the state. Change current law to allow project contingency funds to be used for payment of interest to contractors.

### Impact

More contractors will be interested in bidding state capital projects, which can lead to more competitive bidding, if the state establishes a reputation through actions to promptly pay design professionals and contractors. Prompt payment will also decrease contractors' inclination to inflate their bids to cover this financial burden, which is estimated to be between 1-3% of the project cost.

### Transformation Plan

Reduce the number of steps required to review and approve invoices for payment (R #23) and integrate simplified processes in OAKS-CI (R #20) in order to minimize the use of paper and accelerate the transactional process. Allowing project contingency funds to be used to pay interest will require legislative action. The use of OAKS-CI should be used to automate the payment of interest due contractors for late payments.

### Streamline Dispute Resolution Processes

No.	Recommendation	Proposition	Legislation?	Executive Order?
25	Streamline dispute resolution processes	Use facilitated partnering to identify ADR process & form process for dispute resolution board as final admin. step	N	N

### Background

Article 8 of the state's standard general conditions outlines the dispute resolution process. It begins with the contractor initiating a claim, followed by certification and substantiation of the claim. This is reviewed by the architect/engineer and then the contracting authority's project manager makes a field level decision. If unsatisfied by the field level decision, a contractor may request a review by the State Architect or equivalent within the contracting authority. This is the final administrative decision on the matter. Specific timelines are identified for each step within this process.

Alternative dispute resolution (ADR) is available within the state's standard contract conditions. Forms of non-binding ADR that are acceptable include negotiation and mediation. Other forms of ADR may be accepted. Leveraging alternative processes has the potential to speed resolution of disputes.

### Recommendation

Facilitated partnering during all phases of a project to proactively manage design and construction relations (R #13) will allow parties early on to cooperatively identify an alternate dispute resolution (ADR) process for the specific project. Once a non-binding ADR process is identified at the start of a project, it should be implemented early to resolve disputes, instead of after exhausting the contract's Article 8 process. A dispute resolution board as the final arbiters of the administration process should be considered. Throughout the process, all parties should be treated fairly and equitably. These recommendations are applicable regardless of the project delivery method.

### *Impact*

Disputes that remain unresolved escalate and the impact to all parties increases significantly. The mitigation of cost and time impact to all parties is through timely resolution of disputes. Early identification and implementation of an acceptable ADR process can streamline the dispute resolution process, providing direct value to both owners and contractors by reducing management and legal expenses.

### *Transformation Plan*

Integrate partnering in capital improvement projects within standard contracts and conditions throughout the state (R #15). Incorporate the identification of an acceptable ADR process within early facilitated partnering sessions with contractors. Include this content and overall intended purpose of partnering within a training program for state project managers and administrators to ensure uniform understanding and implementation (R #7).

### **After the Panel: Implementing Reform**

With the conclusion of the last full panel meeting on March 6, 2009 the a group representing legal offices of state government was charged with drafting legislative language and standard construction contract documents in line with OCRP recommendations.

The OCRP is slated to meet on April 6, 2009 in full session for the purpose of reviewing legislative language and contract documents. There is a meeting scheduled for April 13, 2009 if needed.

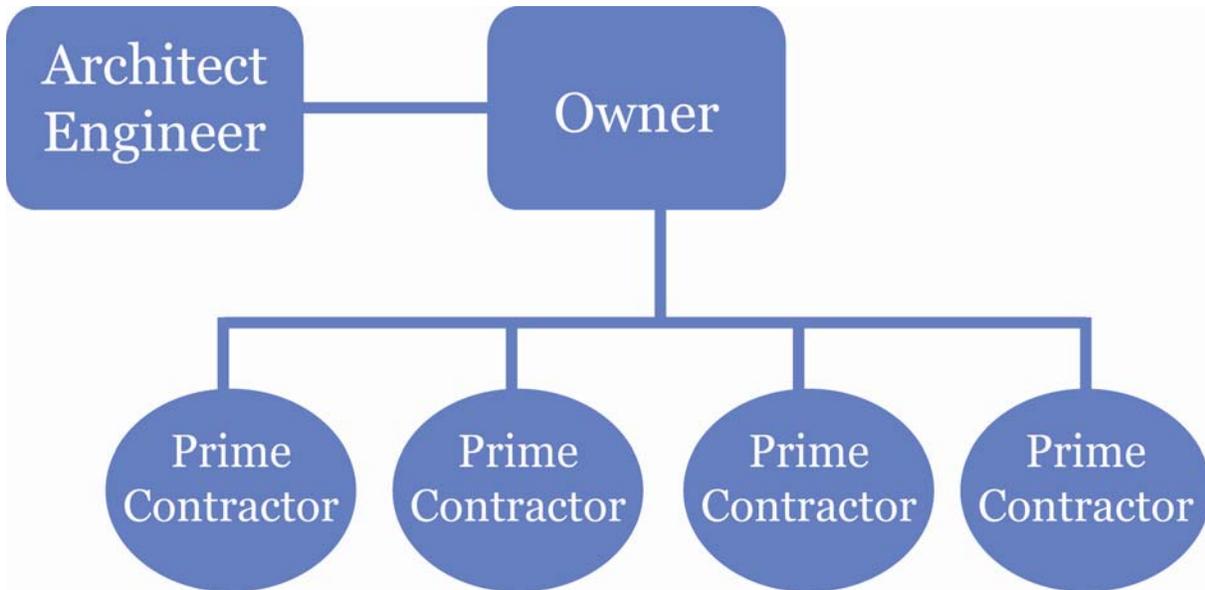
Included with the proposed legislation will be a requirement for the state to establish a system of contractor pre-qualification.

As the state works through the recommendations the Panel recognizes the importance of continued collaboration on many present and future public construction issues.

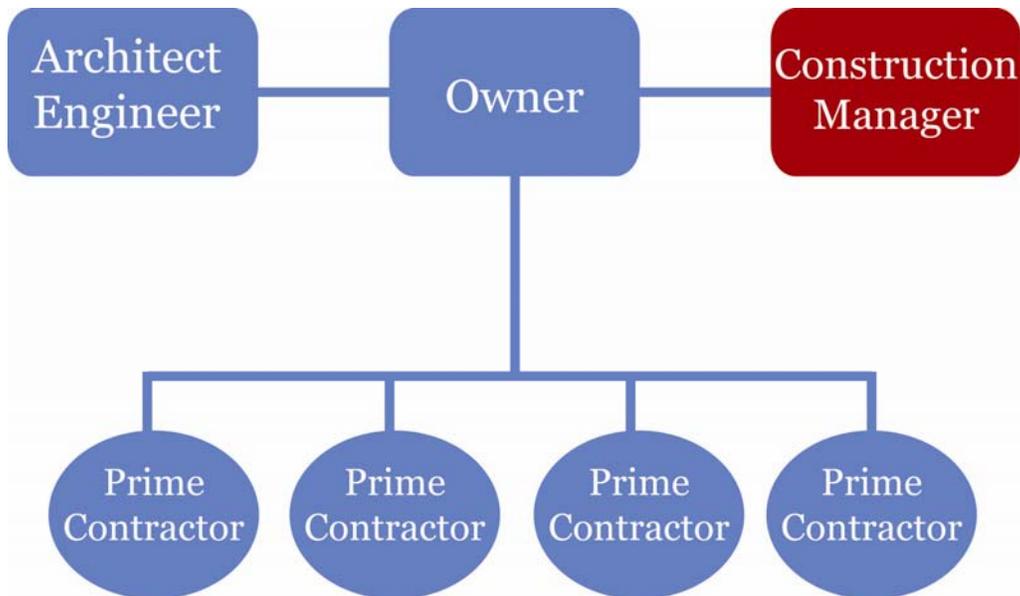
## Appendices

### Appendix 1: Current & Proposed Construction Delivery Methods

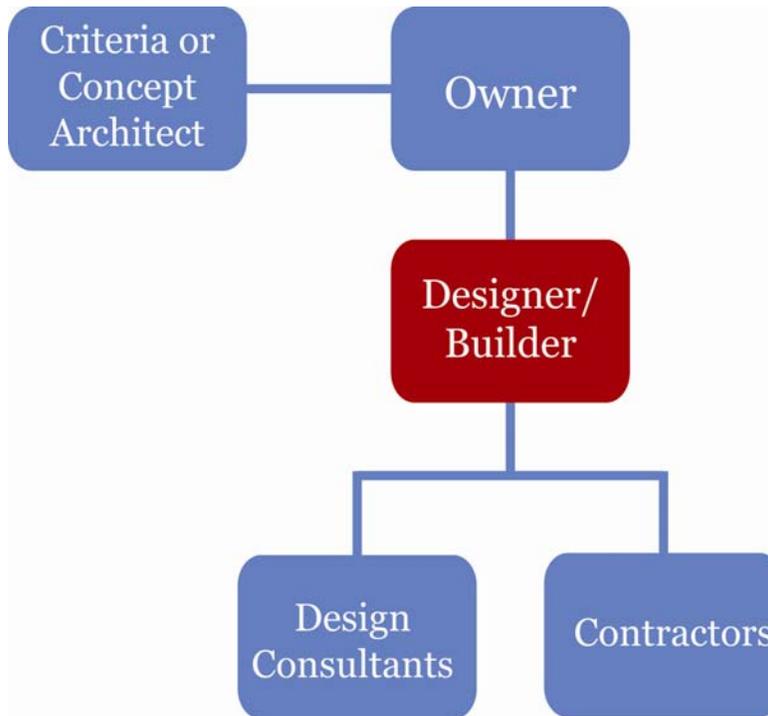
#### Multiple Prime Contracting – Current Method



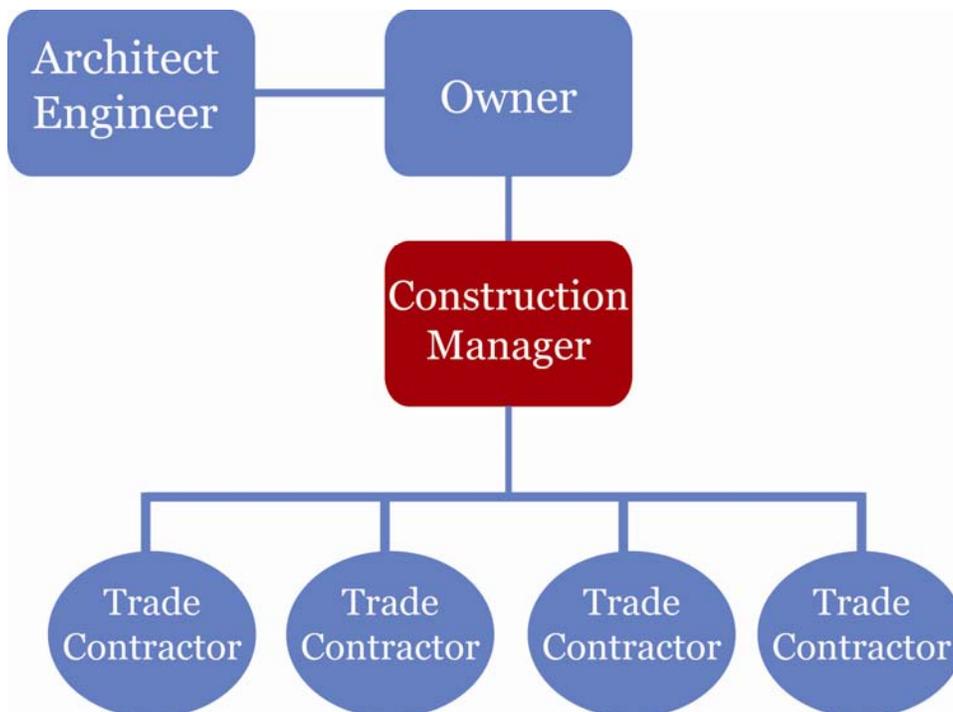
#### Construction Manager as Advisor – Current Method



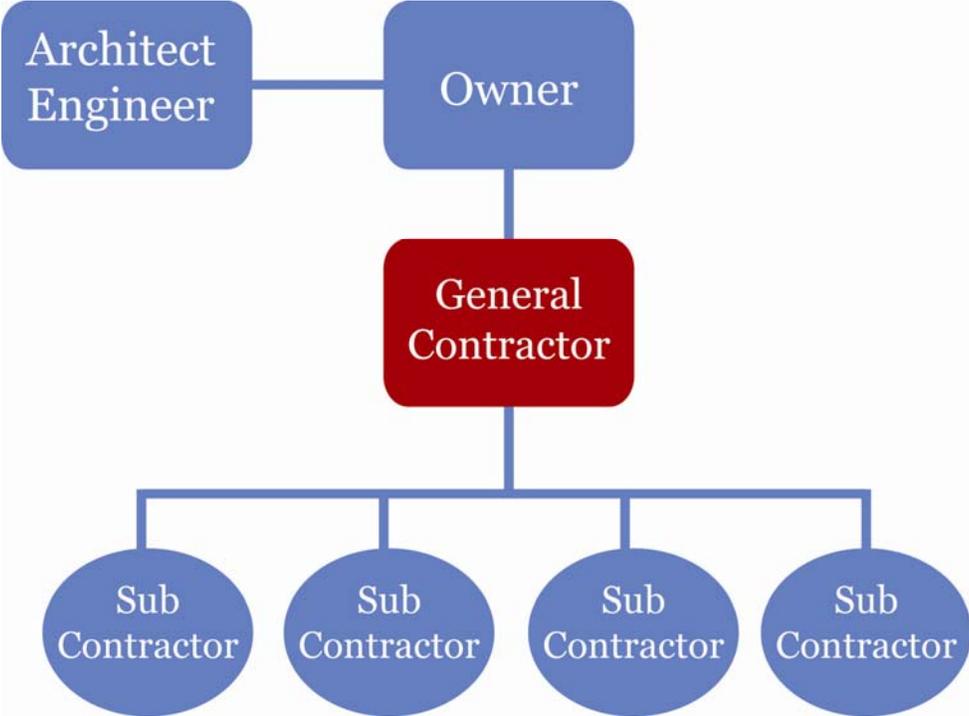
**Design-Build Construction Delivery – Proposed Additional Method**



**Construction Manager At-Risk – Proposed Additional Method**

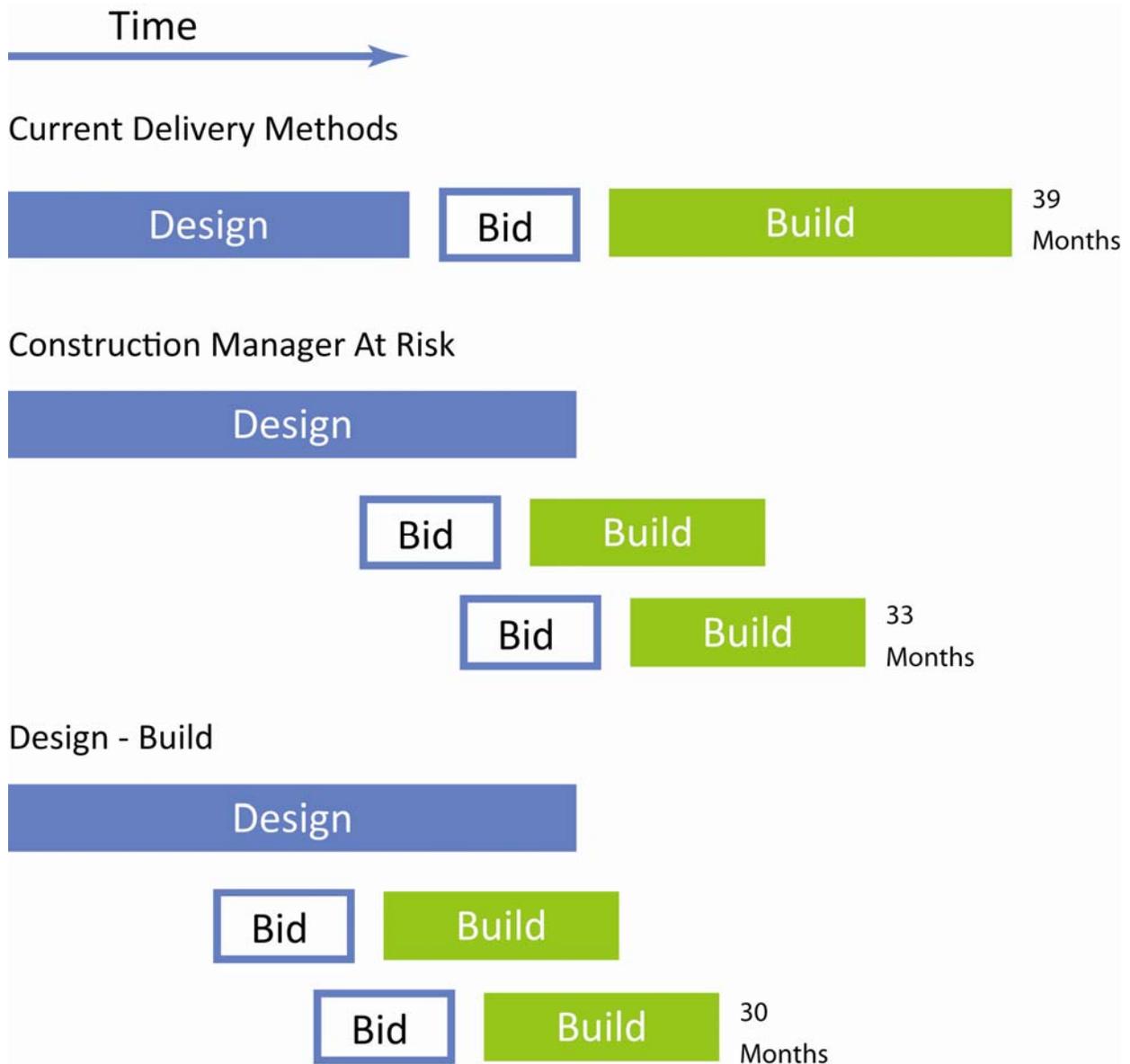


**General Contracting – Proposed Additional Method**



## Appendix 2: Time is Money – The Faster Track of Phased Construction

The two additional proposed methods for construction delivery on public projects provide greater flexibility and efficiency for both owners and contractor/vendors. One of the primary benefits of these methods will be the time saved during capital projects. The following drawings depict some key concepts the OCRP considered regarding the time it takes to go from concept to occupancy.



### Appendix 3: Ohio Construction Reform Panel

Stakeholder Community	Panel Member	Affiliation
Contractors	Rich Hobbs William McNally Greg Stewart Tarrell Mock	Associated General Contractors of Ohio Mechanical Contractors Association National Electrical Contractors Association Minority & Independent Contractors Alliance
Trade Unions	Pasquale Manzi Dennis Duffey Dave Moran Dean Brill Rick Moreno Rich Murray	Ohio State Bldg & Construction Trades Council Intl. Brotherhood of Electrical Workers United Association of Plumbers & Pipefitters United Brotherhood of Carpenters & Joiners Laborers International Union
Construction Mangement	Bob Strickland	Construction Management Assoc. of America
Design Industry	Hal Munger Al Berger	American Institute of Architects American Council of Engineering Companies
Owners/Private Sector	Frank Kass Todd Alexander	Continental Real Estate
Ohio General Assembly	Brian Perera Rep. Jennifer Garrison Sen. Joseph Schiavoni Howard Krisher	Senate Majority Caucus House Majority Caucus Senate Minority Caucus House Minority Caucus
State Agencies & Universities	Chancellor Eric Fingerhut Paolo DeMaria Steve Berezansky Joe Secrest Bill Lindenbaum Bill Shkurti Jack Hershey Richard Hickman Jeffrey Westhoven Craig Weise	Ohio Board of Regents Ohio Board of Regents Ohio School Facilities Commission Office of Budget & Management Ohio Dept. of Transportation Ohio State University Ohio State University Dept. of Administrative Services Dept. of Administrative Services Dept. of Administrative Services
Facilitation	Jeffrey R. Appelbaum Thomas J. Kirkwood Patrick J. O'Brien Steven J. Zannoni	Project Management Consultants, LLC., a subsidiary of Thompson-Hine, LLP

## Appendix 4: Alternate Panel Members, Guests & Staff

Stakeholder Community	Panel Member	Affiliation
Contractors	Sam Halker Valerie Dahlberg Dennis Shuman	Mechanical Contractors Assoc. of Ohio
Trade Unions	Tim Skinner William Koester	United Association of Plumbers & Pipefitters
Construction Management	Pete Devine	Construction Management Assoc. of America
Design Industry	Jim Cicero Keith Willkom Tom Doyle Bob Fuller Bill Shelley	American Council of Engineering Companies American Institute of Architects
Subject Matter Experts	Bill Peacock Maril Sherry Andy Stapleton	The Cleveland Clinic M.A. Mortenson
State Agencies & Universities	Richard Petrick  Patrick McLean Chad Miller Steve Lutz Elizabeth Lowery Ron Sylvester Nadine Wise Sarah Saccany Connor Patton	Ohio Board of Regents  Ohio Board of Regents Ohio School Facilities Commission Ohio School Facilities Commission Dept. of Administrative Services Dept. of Administrative Services Dept. of Administrative Services Dept. of Administrative Services Dept. of Administrative Services
Ohio General Assembly	Joe Gilligan	House Majority Caucus