

# Facilities Planning and Project Delivery Consulting Services

Final Report  
15 May 2008

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15 May 2008

UA Board of Regents:

This document is the Final Report of the UA/RISE Facilities Planning and Project Delivery Consulting Study. After presentation of the Draft Report to the Regents in Ketchikan on 17 April, this Final Report incorporates responses to the following subsequent events:

1. BOR and other UA comments regarding the details of the draft presentation.
2. UAA Social Sciences Building project was presented to the BOR on 17 April after our presentation, and without our knowledge, revealing a significant lack of internal discipline and a disregard for BOR Policy compliance by Facilities staff.
3. Regent Wickersham's subsequent 1 May Master Planning proposal recommending changes to the Master Plan policy and procedures before future capital project reviews and approvals by the BOR.

A sequenced approach to implementation has been developed in response to the above events. Critical implementation steps are: (1) for the BOR Facilities Committee to confirm its intention to move toward a strategic policy base. (2) Simultaneously, for the University Administration (System staff, MAU Chancellors, and Facilities Council) to develop internal discipline, standardization and consistency in compliance with existing BOR policy. Then (3) after a period of 6-12 months, the BOR Facilities Committee would evaluate the work of the Administration and the Facilities Council and consider the next steps to formally adopt the BOR Strategic Policy and to revise/simplify approval authority thresholds.

Note that the Appendices now include the outline of a BOR strategic policy, as well as Master Planning Guidance. We understand that the BOR Facilities Committee will meet on 21 May and have provided this Final Report as a resource for that work session.

Best wishes,

A handwritten signature in blue ink, appearing to read "Sarah Barton" followed by a flourish that likely represents "Bill Anderson".

Sarah Barton and Bill Anderson

## Executive Summary

The UA/RISE Facilities Planning and Project Delivery Consulting Report is based on approximately 50 interviews with the Board of Regents (BOR), the Statewide Administration, MAU leadership and MAU Facilities Departments, as well as representatives of customer groups and the design and construction industry.

The majority of interviewees believe that the quality of the built facilities is good and that the staff performs well. All agreed that it was important to build a more productive working relationship between the BOR, the Administration and Facilities Departments. There were concerns about consistency of policy and procedure, standardization in facilities delivery across all MAUs, rising project costs during design and construction, having sufficient project information and planning, alternative delivery approaches and risk management.

The RISE study team of William Anderson and Sarah Barton analyzed what was learned from the interviews, campus visits, project files and other documents. Initial observations were presented to the Board of Regents in February 2008, with the intent of confirming that key issues had been identified. A worksession in March with the UA Facilities Council further refined the observations and developed the related recommendations. This work was assisted by Brian Rogers, former Chair of the BOR, now a consultant with Information Insights. Brian helped to field-test the recommendations and align them with results of the recent MacTaggart/Rogers study on the effectiveness of Statewide Administration. The policies and procedures of other state universities were reviewed to provide external reference and validation. Implementation of these recommendations should improve communications and working relationships, with more reliability in review and delivery of projects.

At the heart of these recommendations is the reinvention of the BOR Facilities Committee policy, moving from a tactical to a strategic approach. This shift of BOR focus, with the related changes in the Administration and Facilities Council should improve effectiveness, accountability, efficiency and service levels. In making this shift, the BOR Facilities Committee will focus its

agenda on stewardship and legacy decisions for the future of the university.

The recommendations contained in this report are a coherent whole, to be implemented as an integrated package. Piecemeal implementation will not achieve the benefits of risk management, more successful project delivery and better working relationships.

Following is the summary of the eleven recommendations.

1. Reinvent the BOR Facilities Committee policy to be strategic instead of tactical.
2. Reshape BOR approval authority levels for consistency and simplicity, and to facilitate a more strategic agenda.
3. Simplify and develop BOR project approval process for maximum influence on legacy decisions.
4. Revitalize the facilities planning function through dedicated planning positions and enhanced Master Planning.
5. Combine the BOR Facilities and Finance Committees as each involves major overlapping financial and legacy decisions.
6. Employ alternative project delivery methods as an effective tool of risk management.
7. Develop use of debt-financing for academic projects.
8. Recreate the UA Statewide facilities leadership position (AVP for Facilities) to be funded from the UA operating budget.
9. Improve the project budget template and use it as a tool for cost-estimates and BOR reporting.
10. Establish a 3-Year CIP with a backlog of high priority projects beyond Year 3, in place of the current 6-Year CIP.
11. Standardize BOR communications and project reporting.

## Implementation Approach

BOR comments were received on 17 April following presentation of the Draft Final Recommendations. Key issues identified by Facilities Committee members included: need for sound cost estimates with adjustment mechanism; value of national benchmarking; need for integrated planning of projects with Master Plans; interest in debt-financing to supplement and match state appropriations; interest in alternative project delivery work session; support for 3-Year CIP; concern with piecemeal planning and funding of projects; fine-tuning of BOR project approval sequence; possible addition of the BOR Facilities Chair to the Facilities Council; BOR intent to maximize every dollar spent on UA facilities; concern with changing approval thresholds until changes are made by Facilities staffs; opening to merge BOR Facilities and Finance Committees.

In a subsequent presentation by UAA for Formal Project and Schematic Approval of the Social Sciences Building, it became evident that internal facilities department discipline and regard for BOR policy compliance was lacking. Because of this unfortunate occurrence, we have changed the sequence and timing of our proposed recommendations.

The critical steps in an implementation sequence is (1) for the BOR Facilities Committee to confirm its intention to move toward a strategic policy base. (2) Simultaneously, for the University Administration (System staff, MAU Chancellors, and Facilities Council) to develop internal discipline, standardization and consistency in compliance with existing BOR policy. Then after a period of 6-12 months, the BOR Facilities Committee would evaluate the work of the Administration and the Facilities Council and consider the next steps to formally adopt the BOR Strategic Policy and to revise/simplify approval authority thresholds.

Recommended BOR Facilities Committee actions:

1. Affirm moving from tactical to strategic policy base to maximize influence on stewardship and legacy decisions.
2. Combine Finance/Facilities Committee meetings.
3. Develop and schedule BOR Facilities strategic agenda.
4. Address the need for Master Plan document and policy updates.
5. Support recreating UA Statewide facilities leadership position to guide the work of the Facilities Council.

The simultaneous work of the State-wide system staff, the three Chancellors, and the Facilities Council:

1. Standardize communications and project reporting, contracts, cost-estimating protocols and template, project controls upgrades, dashboard reporting, internal processes and procedures across all MAUs.
2. Without exception, conduct business in compliance with existing BOR Facilities policy.
3. Establish a 3-year CIP with backlog of high priority projects beyond Year 3.

Subsequent changes to be considered by the BOR Facilities Committee in 6-12 months after results are achieved by the University Administration and the Facilities Council:

1. Adopt BOR strategic policy.
2. Simplify and develop BOR project approval process for maximum influence on legacy decisions.
3. Revise BOR approval authority levels to facilitate strategic agenda.

## Scope of Work

After response to the UA RFP in December 2007, RISE was selected and contracted to provide consulting services to the University of Alaska. The scope for this study was to:

- Review and evaluate facilities planning, project delivery and construction operations at each MAU including the Statewide system.
- Consider organizational structure, staffing, policies, processes and procedures.
- Provide high-level recommendations to improve effectiveness, accountability, efficiency and service levels.

## Study Approach

1. Data assembly and review
2. Campus, BOR and industry interviews, site visits
3. Data evaluation and assessment
4. Observations and preliminary findings
5. BOR presentation of 60% Interim Report, 7 February 2008
6. Facilities Council worksession, 3-4 March 2008
7. BOR Draft Final Recommendations issued 3 April 2008
8. Draft Final Report to UA Administration/Staff issued 7 April 2008
9. BOR presentation of Draft Final Recommendations, 17 April 2008
10. UA comments on Draft Final Report, 25 April 2008
11. Final Report issued 5 May 2008

## Interviews

The RISE study team included Sarah Barton and William (Bill) Anderson. The RISE team also included strategic guidance from Brian Rogers, former Chair of the BOR and now a Principal with Information Insights. Sarah and Bill met with the Facilities Committee of the Board

of Regents in February 2008, and then began individual interviews with each of the Regents, as well as site visits to the three MAUs for staff and consultant interviews. Interviews covered organization and staffing; roles and responsibilities; policies and procedures; management effectiveness; master and capital planning; project planning and design; procurement methodologies; construction operations; and customer satisfaction. See Appendix 1 for Study Interview List.

## Observations

Preliminary observations were presented to the BOR in February 2008 as the 60% Interim Report. These observations have now been refined and field-tested with more research and engagement with the University staff and project files. The following observations served as the basis of the findings and recommendations for this report. They are in four categories: BOR Policies and Procedures; Funding and CIP Structure; UA Administration; Facilities Procedures.

### **BOR Policies/Procedures Observations**

1. Current BOR policy blends strategic direction with detailed execution instructions. The current focus of the BOR Facilities Committee is tactical, not strategic. This has resulted in lengthy meetings with demands on BOR time and energy often out of proportion to the budget and significance of decisions to be made. The majority of projects are Repair and Replacement (R&R), not new construction.
2. The BOR committee structure and meeting protocols could be enhanced. The BOR Facilities and Finance Committees are separate and often meet simultaneously, precluding mutual attendance though many of the agenda items are related. Project reporting to the BOR could be more standardized across the MAUs. Current BOR project approvals sequence provides limited opportunity for BOR influence on project decisions.
3. Delegated approval authority levels are confusing, inconsistent and low. Current policy PO5.12 drives tactical focus, e.g., a cost variance of \$200K needs approval by the Facilities Committee Chair.

4. The BOR Facilities Committee is operating at a tactical, not strategic, level. This means that significant strategic issues are not being addressed, such as: systematic interface with state legislature to influence UA capital funding, master planning development, legacy decisions of stewardship, campus design and architectural quality issues, sustainability and energy policy, strategic land acquisition and others.
2. Relations between the BOR and UA Facilities Administration need improvement, as noted in interviews of the BOR, staff and Administration. The context of the working relationship has been challenged by a few problematic high-profile projects, a poor Statewide facilities leadership experience, the current large number of new BOR members and BOR policy inconsistencies.

### Funding/CIP Structure Observations

1. The state funding process is unpredictable, leading to challenges of planning and execution. The state appropriation request has averaged \$157M over the last five years. UA has received an average of \$34M/year, about 22% of the request. UA Facilities departments have been opportunistic and ingenious in making the best use of what is at hand, but rational and cost-effective planning and delivery is seriously challenged. This is the single most significant causative factor for difficulties in capital project execution.
2. The 6-Year Capital Improvement Plan is unrealistic in scope and size, resulting in frustration and the inability to plan rationally. The capital plan and capital budget requests are not aligned with historic appropriation levels or university needs. The 6-Year CIP contains over \$1 billion of capital project needs (83% of which are for State Appropriations). Based on the last five years' State Appropriation average of \$34M per year, the current 6-Year CIP would take 25 years to execute.
3. There is limited use of debt-financing for capital projects.

### Statewide Administration Observations

1. Chain of command is not being followed, impacting accountability. While efficient, the current practice does not conform to the UA designation of line authority through the three Chancellors of the MAUs. For some facilities issues, the President deals directly with the Facilities Officer of the MAU, bypassing the Chancellor and Vice-Chancellor.

3. The Statewide facilities office has been ineffective, but the need still exists. Historically, this office has had a policy-setting and coordination role. There is a valid need for a Statewide Facilities office to develop policy, monitor execution, ensure consistency across MAUs, facilitate communication between BOR and staff, coordinate facilities planning and develop the UA Capital Improvement Plan. This role will require construction experience, as well as leadership and diplomacy skills and the ability to operate in a matrix environment.

### Facilities Procedures Observations

1. Most facilities projects are delivered within schedule and budget. The BOR process now is designed to focus on problems, with little attention to successes and overall productivity of the Administration and Facilities Departments. The majority of funding and projects are R&R, rather than new construction or additions of new square footage.
2. The UA Facilities staff is competent, dedicated and effective. Project managers work individually from 'cradle to grave' for each project. Each MAU expressed staffing concerns.
3. Planning resources for campuses, facilities and projects are inadequate. Unlike other major universities, there are no staff resources dedicated solely to facilities planning. Planning efforts are funded through capital project charge-backs, rather than general operations funds. Campus master plans vary in approach and content, and the process for approvals of the plans and variances is unclear.
4. Project controls approach to schedule and budget focuses on recording what happened, rather than anticipating what is needed.

5. Cost-estimating is not standardized and variances have been a source of friction with the BOR. There is no defined process for estimating at different project phases, for designated contingency, for inflation and escalation adjustments, for inclusion of premiums due to geography.
6. Innovative project delivery methods can effectively manage risks and deliver projects when properly employed. This is an issue of risk management. UA has used a range of delivery approaches, though sometimes limited by external influence of legislature and the construction industry. The BOR has a bias for traditional design-bid-build that is not the best approach for all project delivery.

## Findings and Recommendations

The BOR, Administration and Facilities staffs are aligned on the need to establish greater trust and confidence in support of productive working relationships. The following recommendations are designed to promote and strengthen working relationships for the benefit of the University's long-term future. The recommendations begin with the need for reinvention of the BOR policy to be strategic, with a focus on legacy decisions and stewardship. Accompanying this shift in the BOR policy, are recommendations for the University Administration and Facilities Departments to standardize processes and products across all MAUs, under the auspices of a strong Facilities Council. The BOR needs to set the strategic stage, and then charge the Facilities Council and Administration to "make it so".

The recommendations contained in this report are a coherent whole, to be implemented as an integrated package. Piecemeal implementation will not achieve the benefits of risk management, more successful project delivery and better working relationships.

### Finding 1: BOR Strategic Policy

The focus of the Board of Regents Facilities Committee has been more tactical in nature than strategic. Therefore, there are significant strategic opportunities being missed.

#### Recommendations:

1.1 That the Board of Regents Facilities Committee change its focus to high-level strategic issues such as:

- Master planning and long-term campus planning
- Legacy decision-making regarding campus design, architectural quality (including architectural guidelines) and infrastructure planning
- Influencing and modifying the state of Alaska capital funding process to establish a consistent and adequate stream of capital funding for the University of Alaska
- Innovative capital project financing to include debt and third-party financing options
- Sustainability and energy policies; including strategies for energy savings, long-term utility procurement and productions, and LEED certification
- Strategic land acquisitions
- Stewardship policies; including capital renewal and facilities maintenance funding levels
- Capital projects with a significant long-term impact on UA campuses: new construction, building additions, and Repair and Replacement projects in excess of \$5 million
- Broad oversight and results-oriented accountability



1.2 That the Board of Regents Facilities Committee completely rewrite its policy to support a strategic focus. Simply revising the policy will not be adequate because the overall philosophy and approach need to be reinvented. A proposed draft policy outline is submitted for consideration as Appendix 2.

**Finding 2: Project Approval Thresholds**

The capital project approval and reporting processes established in Regents Policy P05.12 are confusing, inconsistent, and difficult to follow. Furthermore, the exceedingly low delegation levels inhibit the Regents’ ability to focus on a more strategic agenda.

**Recommendations:**

- 2.1 Reshape Board of Regents’ authority levels so they are more consistent and streamlined, adjusted regularly to the forces of inflation/escalation.
- 2.2 Recommend that new construction projects valued at \$2 million or greater go to Board for approval as noted below, and that approval of projects less than \$2 million be delegated to the President.
- 2.3 Recommend that R&R projects \$5 million or greater go to the Board for approval, and that authority be

delegated to the President for R&R projects less than \$5 million. R&R projects should be reviewed by Board when the Annual CIP is approved.

- 2.4 Allow cost variances up to the lesser of 25% or \$2 million provided that a Regent approval threshold is not tripped. If a threshold is tripped, then the variance would be brought to the Board for approval as indicated below.
- 2.5 Empower the President to further delegate his/her authority to Chancellors or other senior staff members provided that the President retains accountability. The Facilities Committee may delegate approval authority to the chairperson of the BOR Facilities Committee.
- 2.6 Recommend that the President bring new construction projects under \$2 million or R&R projects under \$5 million to the Board when strategic guidance is needed or when projects will have a significant impact on the University.

The recommended approval thresholds are summarized below.

**Project Approval Thresholds**

New Construction	R&R Projects
< \$2M President	< \$5M President
\$2-5M BOR Committee	\$5-10M BOR Committee
>\$5M Full BOR	> \$10M Full BOR

**Approval for Cost Variances**

< or = 25% President
> 25% BOR/BOR Facilities Committee
> \$2M BOR

### Finding 3: Capital Project Development Process

Regents Policy P05.12 contains a capital project development process. The process set forth in the current Policy is based on the [approval chain](#) and not on the actual process necessary to plan, design, and construct a capital project. Redefining the process to reflect the actual steps required to execute a capital project will streamline, simplify, and improve project delivery.

#### Recommendations:

- 3.1 Change the process described in the current Regents' Policy to reflect the actual steps required to plan, design, and construct a capital project. Develop a macro-process map with the key steps and decision points, appropriate approvals, levels, and authorizing official. A project process map is submitted as Appendix 3.
- 3.2 Recommend the following Regent approval protocol to enable the Board to influence legacy decisions and maintain fiscal responsibility:
  - The first approval, or BOR Capital Budget Approval occurs when a project is approved to be incorporated in the University's Capital Budget Request.
  - The second approval, or BOR Preliminary Design Approval is recommended early in schematic design (between 15% and 35% design). At this time, the Board would approve the preliminary design and a preliminary design cost estimate.
  - The third approval, or BOR Final Approval is recommended at the final design stage. At this point the Board would approve the final design and the final design cost estimate, then authorize the procurement and construction phases to proceed. Note Recommendation 2.4 speaking to thresholds for cost variances between BOR Final Approval and project bid.

### Finding 4: Campus and Facilities Planning

Planning for University facilities needs to be improved. Facilities planning resources need to be developed.

- There are no dedicated facilities planning positions at the MAUs or within the Statewide staff. This differs from most major universities. The MAUs compensate for this lack of dedicated resources and expertise by tasking project managers to perform project planning. Broader campus planning is performed by the Facilities Director/AVC. This may work at UAS, but not at the two larger MAUs.
- There is no standard template for campus master plans. Master plans have been developed for the Fairbanks, Anchorage, and Juneau campuses. While each one is good in its own right, they lack consistency. Fairbanks has adopted a "framework" approach to master planning, while the two other campuses have used a more prescriptive master planning approach. Both approaches have merits. Acknowledging that master plans are in fact plans and subject to change, there are no clearly defined processes to review deviations from approved master plans for submission of variances and subsequent approval by the BOR.
- Planning for individual projects is improving. An example of this improvement is the planning for the UAA Health Sciences Building.

#### Recommendations:

- 4.1 Establish two positions for campus planners, one each at UAF and UAA. Positions should be funded from the University's operating budget and not as a charge-back. Establish a protocol to use the Anchorage position to support UAS as needed.
- 4.2 Amend the Regents' policy to include broad expectations for preparation, approval and updating of campus master plans. Recommend a standard template for master plans for the three main campuses. Over time, migrate to the framework master plan approach for the three main campuses. As remote campuses are smaller, consider developing a separate template for them.
- 4.3 Include broad architectural guidelines in each master plan. As each campus has its own character, guidelines should be specific to that campus and recognize the different architectural styles and

building typologies that have developed over time. The University should recognize the importance of the master plan and architectural guidelines in making legacy decisions for its campuses.

- 4.4 Conduct a “lessons learned” session with the Facilities Council to review successes and failures of project planning.

#### **Finding 5: Merged Agendas for BOR Finance and Facilities**

There is a significant overlap of interests and agenda issues between the BOR Facilities and Finance Committees. Members of each Committee would benefit from participating in the deliberations of the other committee. In a benchmark review of over a dozen policies of other state universities, more than half had combined the finance and facilities committees.

#### **Recommendation:**

- 5.1 Consider combining the both Facilities and Finance Committees as each involves major financial and legacy decisions. With a new Regent Facilities policy that is more strategic in nature and without the many detail-level reviews for R&R and small projects, the BOR Facilities Committee agenda will become more strategic and streamlined. It is recommended, for the next year or two, that the BOR schedule joint Facilities and Finance Committee meetings and work toward refining the combined agenda. After this interim period, the BOR could evaluate the merits of permanently combining the two committees.

#### **Finding 6: Alternative Project Delivery**

The BOR Facilities Committee requested more information on the best use of alternative project delivery, indicating its strong bias for traditional design-bid-build. See Appendix 4 outlining advantages and disadvantages, as well as project characteristics defining use of different approaches.

#### **Recommendation:**

- 6.1 Recommend BOR workshop on alternative delivery methods. Explore the value of selecting the appropriate project delivery approach as a tool for risk management. The workshop should include a panel with the UA Facilities Council, Administration, BOR and other state agency and industry representatives. Reference state procurement by Washington and Oregon as models of successful public sector applications. MAUs would share case studies of UA projects delivered with traditional and alternative delivery methods.

#### **Finding 7: Debt-Financing**

The principal source of capital funds for the University of Alaska is State appropriations. State funding is unpredictable and tremendously variable from year to year. Large capital projects frequently are not funded in one year’s appropriation and need be funded over multiple years with no guarantee of complete funding for the entire project scope. Funding of projects is often political and not based upon University priorities. UA facilities departments have been opportunistic and ingenious in making the best use of what is at hand, but rational and cost-effective planning and delivery is seriously challenged at best. This is the single most significant cause of problems in capital project execution.

#### **Recommendations:**

- 7.1 Consider debt-financing for academic projects. Several years ago the Pennsylvania State University was faced with similar problems of unpredictable and insufficient state capital funding. That University decided to leverage its bonding capacity and borrow money to fund capital projects. Tuition and research indirect costs recovery were used to service the debt.
- 7.2 Explore with the Governor and Legislature the use of matching funds to augment state capital appropriations. This also may create opportunities for a steady stream of funding for capital projects.

- 7.3. Explore innovative financing options such as third party financing to provide additional sources of capital funding.

### **Finding 8: Statewide Facilities Leadership**

The Statewide facilities office has been ineffective, but the need still exists. Historically, this office has had a policy-setting and coordination role. There is a valid need for a Statewide Facilities office to develop policy, monitor execution, ensure consistency across MAUs, facilitate communication between BOR and staff, coordinate facilities planning and develop the UA Capital Improvement Plan. This role will require construction experience, as well as leadership and diplomacy skills, and the ability to operate in a matrix environment.

#### **Recommendations:**

- 8.1 Recreate the UA Statewide facilities leadership position (AVP for Facilities) funded from the UA operating budget and not as a re-charge. This person would serve as a liaison to Regents and provide leadership and advocacy to the Facilities Council. This office requires one or two additional staff members to ensure success. MAUs and Facilities Council need to be actively involved in establishing qualifications, skills and abilities and in developing the job description. While areas of expertise should include construction, project management, financial management, and facilities operations, the more critical qualifications entail leadership, communication skills, teamwork, and the ability to work in a matrix environment. The AVP should be an advocate for each of the MAUs and have a general knowledge base in facilities development, operations and maintenance. This policy-oriented position should report to the Vice President for Administration and work in close relationship to the Chief Finance Officer. If, in the future, there is an executive vice president for Finance and Administration, the AVP should report to EVP instead. The AVP would be the key liaison with the BOR Facilities Committee. He/she would brief the Committee Chair in advance of meetings and, in partnership with the MAU Chief Facilities Officers, develop and make project presentations to BOR.
- 8.2 The University should conduct a nationwide search to fill the Facilities AVP position. The salary level needs to be sufficient to attract the best candidates. The three MAU Chief Facilities Officers should be on the selection committee, with the Chair of the BOR Facilities Committee and the University President to interview finalist candidates.
- 8.3 The AVP for Facilities should chair the University's Facilities Council. This council needs to be strengthened and should continue to meet one month before each BOR meeting, at least six times per year. Recommend that the Council charter be revisited to ensure the proper focus in response to the new roles and responsibilities of everyone involved in facilities matters, from BOR to MAUs. The charter should include: advise in selection of Chief Facilities Officers and other critical positions, LEED, facility policy revisions, standardization of processes and products across MAUs, benchmarking, architectural guidelines and other topics of broad University-wide interest. The Facilities Council should serve as a resource to BOR Facilities Committee.

### **Finding 9: Project Cost-Estimates**

Cost estimates have not been consistently accurate. If a project budget is set too low at the early stages of the project, the project starts at a disadvantage and may never recover. This leads to future BOR frustration and questions of staff credibility. Some of the reasons for this problem include:

- The template used by MAUs to establish initial budgets is not adequate to comprehensively address total project costs.
- The MAU's database used to benchmark costs is not extensive enough for adequate comparisons.
- Cost escalation is not adequately estimated. This is a result of the unpredictability and long delays in project funding and the lack of appropriate data to assess and predict escalation rates.
- Once a project is included in the CIP, its costs are not appropriately updated annually for schedule slippage and escalation.

**Recommendations:**

- 9.1 Improve the project budget template and use it as a tool for developing budget estimates when a project is submitted for inclusion in the CIP. The template should include program SF broken down by type of space (lab, office, classroom, etc.), anticipated year of construction, full soft costs, adequate contingencies, etc. A proposed template modified from that used by Penn State is attached for information, Appendix 5.
- 9.2 Use national benchmark cost data in addition to University of Alaska benchmarks.
- 9.3 Fully estimate soft costs using prior University experience. If details are not known, use standard percentages for FF&E, IT, art, etc.
- 9.4 Add sufficient escalation to project estimates. Clearly state the assumptions regarding escalation rates and the date of the mid-point of construction.
- 9.5 Carry sufficient contingency. At the very early stages of a project, contingency should be high and then decrease as design progresses.
- 9.6 Ensure estimates include premiums for geographic location of each campus.
- 9.7 Annually update the cost estimates for projects in the CIP to account for further escalation and scope changes.

**Finding 10: 3-Year CIP**

The 6-Year Capital Improvement Program (CIP) is unrealistic in scope. Funding is erratic and unpredictable making project planning and execution difficult at best. The CIP now contains about \$900 million in capital projects targeted for State appropriations. Over the last five years, however, state capital authorizations have averaged only \$35 million (see Appendix 6, State Appropriation History). At this authorization rate, it would take 25 years to execute the existing 6-year CIP projects. At the same time, many existing campus buildings are already 35 years and older and will need to be included for future replacement or renewal.

**Recommendations:**

- 10.1 Establish a 3-Year CIP with a backlog of high priority projects beyond Year 3 in place of the current 6-Year CIP.
  - Develop the backlog of high priority projects from the current 6-Year CIP. Update the backlog annually by adding new requirements and deleting obsolete projects.
  - In Year 3, develop a short list of projects that will subsequently move forward to the Capital Budget Request stage in Year 1 of the CIP. Review project cost estimates and update them as appropriate for additional escalation and other costs.
  - In Year 2, begin the pre-design work: programming and conceptual planning. This pre-design work would be funded from the University's operating budget.
  - Projects in Year 1 would form the University's Capital Budget Request.
  - All three years of the plan should reflect realistic capital funding expectations. The University should not set its sights too low, but on the other hand, not be unrealistic in its request.
- 10.2 Develop a user-friendly spreadsheet or database for all projects in the CIP similar to the proposed model attached. The information can clearly show project data (including SF), cost estimate and year, source/quality of the estimate, projected start date, funding sources, and comments. See Appendix 7 Capital Plan Spreadsheet.

**Finding 11: BOR Presentations and Products**

Communication of project information is not adequate and needs to be improved. This includes such things as project approval/authorization requests to the BOR, project status reports, CIP information, etc. Presentations and products are inconsistent across the MAUs. Project controls are a more historical record than risk management tools.

## Recommendations:

- 11.1 Capital Budget request – Develop a streamlined template for capital projects to be submitted as part of the Capital Budget Request (Year 1 of the CIP). Include the new budget/estimating form discussed in Recommendation 9.1.
- 11.2 BOR Project Approval requests - Reporting formats should be standardized across MAUs. Include a copy of the project development process map noting the current status of the project. Standardization supports clarity of presentation to BOR, as well as training of new staff, and is important in clear and efficient communication.
- 11.3 Project status reports - Develop one-page summary of all new construction projects over \$2M and R&R projects over \$5M to be included in each BOR meeting workbook. Include a one-page summary for each of these projects to be updated in each BOR meeting binder.
- 11.4 Project controls – Develop an automated method of transferring data from the existing Banner system to project management software. Evaluate the quality and effectiveness of PM software and standardize an optimal system across all MAUs. This will support anticipatory cost forecasts and standardized reporting for large capital construction projects.
- 11.5 Dashboard - Develop a web-based “dashboard” to display summary project data at glance. The dashboard should include: scope, schedule, and budget information in an easy to read format. Consider using green/yellow/red indicator technique. Link project web pages electronically to the project status report mentioned above, to all approval documents, and to BOR project history for easy reference by BOR, Administration and staff.

## Implementation Approach

BOR comments were received on 17 April following presentation of the Draft Final Recommendations. Key issues identified by Facilities Committee members included: need for sound cost estimates with adjustment mechanism; value of national benchmarking; need for integrated planning of projects with Master Plans; interest in debt-financing to supplement and match state appropriations; interest in alternative project delivery work session; support for 3-Year CIP; concern with piecemeal planning and funding of projects; fine-tuning of BOR project approval sequence; possible addition of the BOR Facilities Chair to the Facilities Council; BOR intent to maximize every dollar spent on UA facilities; concern with changing approval thresholds until changes are made by Facilities staffs; opening to merge BOR Facilities and Finance Committees.

In a subsequent presentation by UAA for Formal Project and Schematic Approval of the Social Sciences Building, it became evident that internal facilities department discipline and regard for BOR policy compliance was lacking. Because of this unfortunate occurrence, we have changed the sequence and timing of our proposed recommendations.

The critical steps in an implementation sequence is (1) for the BOR Facilities Committee to confirm its intention to move toward a strategic policy base. (2) Simultaneously, for the University Administration (System staff, MAU Chancellors, and Facilities Council) to develop internal discipline, standardization and consistency in compliance with existing BOR policy. Then after a period of 6-12 months, the BOR Facilities Committee would evaluate the work of the Administration and the Facilities Council and consider the next steps to formally adopt the BOR Strategic Policy and to revise/simplify approval authority thresholds.

Recommended BOR Facilities Committee actions:

1. Affirm moving from tactical to strategic policy base to maximize influence on stewardship and legacy decisions.
2. Combine Finance/Facilities Committee meetings.
3. Develop and schedule BOR Facilities strategic agenda.
4. Address the need for Master Plan document and policy updates.
5. Support recreating UA Statewide facilities leadership position to guide the work of the Facilities Council.

The simultaneous work of the State-wide system staff, the three Chancellors, and the Facilities Council:

1. Standardize communications and project reporting, contracts, cost-estimating protocols and template, project controls upgrades, dashboard reporting, internal processes and procedures across all MAUs.
2. Without exception, conduct business in compliance with existing BOR Facilities policy.
3. Establish a 3-year CIP with backlog of high priority projects beyond Year 3.

Subsequent changes to be considered by the BOR Facilities Committee in 6-12 months after results are achieved by the University Administration and the Facilities Council:

1. Adopt BOR strategic policy.
2. Simplify and develop BOR project approval process for maximum influence on legacy decisions.
3. Revise BOR approval authority levels to facilitate strategic agenda.

# UA Study Interviews, January - March 2008

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## Board of Regents Interviews

- Mary Hughes, Chair
- Cynthia Henry, Vice Chair
- Michael Snowden, Secretary and Chair of the BOR Facilities Committee
- Carl Marrs, Treasurer
- Timothy C. Brady, member of Facilities Committee
- Fuller Cowell, member of Facilities Committee
- Erik Drygas
- Patricia Jacobson
- Robert Martin, member of Facilities Committee
- Kirk Wickersham, member of Facilities Committee
- Jeannie Phillips, BOR Executive Officer

## MAU Interviews

- Chris Turletes, UAA Interim Associate Vice Chancellor, Facilities and Campus Services
- Mike Smith, UAA Director Facilities Design and Construction
- Fran Ulmer, UAA Chancellor
- Bill Spindle, UAA Vice Chancellor
- Michael Driscoll, UAA Provost and Vice Chancellor
- Steve Rollins, UAA Dean
- Stan Vanover, Barb Lundeby, Howard Morse, Tim Nelson, Bob Maxwell (UAA Facilities staff)
- Kathleen Schedler, UAF Associate Vice Chancellor for Facilities
- Dave Miller, Mike Ruckhaus, Linda Zanazzo, Stephen Gemmell, Mike Schuetz, Jenny Campbell, Karl Petterson, Cameron Marc Wohlford and others (UAF Facilities staff)
- Mike Grahek, SW Chief Procurement Officer
- Keith Gerken, UAS Director of Facilities
- John Pugh, UAS Chancellor
- Carol Griffen, UAS Vice Chancellor for Administration
- Tish Griffen-Satre, UAS Acting AVC Student Services

## Industry/Customer Interviews

- Mark Pusich, VP of R&M Engineering
- Tony Yorba, Principal at Jensen, Yorba, Lott Architects
- Jack Wilbur, Design Alaska
- John Blake, Director ORI
- CB Bettisworth, Bettisworth North
- Other informal construction industry interviews

## UA Administration Interviews

- President Mark Hamilton
- Wendy Redman, VP of University Relations
- Joe Trubacz, CFO
- Jim Johnson, VP for Administration
- Jim Lynch, Associate VP for Finance



# Draft BOR Facilities Committee Strategic Policy

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Regents' Policy  
Part V – Finance and Business Management  
Chapter 05.12 – Facilities Management and Capital Management

## Outline:

### P05.12.010 Introduction and Purpose

- Very high level discussion of the importance of facilities and real estate in the mission of the University of Alaska
- Discussion of the importance of stewardship and legacy decisions
- Purposes of this chapter of Board policy – to define policy regarding facilities management and capital planning, to establish roles and responsibilities for the Board and University Administration, and to set broad guidance for execution of Regents' policy

### P05.12.020 Roles and Responsibilities

- **Board of Regents** – As the governing body of the University of Alaska, responsible for the long term vision for University lands, campuses, and facilities; steward of the University's physical assets; and legacy decision making.
- **University President** – As the Chief Executive of the University, provides the leadership to achieve Regent's vision for the University lands, campuses, and facilities. Responsible for stewardship of the University's physical assets; long term campus, facilities, and capital planning; execution of capital and other project; and efficient management of the facilities enterprise
- **Chancellors** – As the Chief Operating Officers of their Major Administrative Units, Chancellors have responsibilities similar to the Presidents for the campuses under their purview
- **Chief Procurement Officer** – Statutory authority under State of Alaska statutes for procurement of facilities maintenance, construction, and services contracts

### P05.12.030 Long Range Planning

- **Master Planning**
- **Capital Planning**

### P05.12.040 Stewardship Renewal and Replacement

- **Maintenance and Repair**

### P05.12.040 Authority and Delegation for Facilities Projects

- **Project Approval Thresholds**

#### *New Construction Projects*

President: < \$2 Mil

Regents' Facilities Committee: \$2 Mil - \$5 Mil

Board of Regents: > \$5 Mil

#### *Repair and Replacement Projects*

President: < \$5 Mil

Regents' Facilities Committee: \$5 Mil - \$10 Mil

Board of Regents: > \$10 Mil

#### *Delegation*

President may delegate authority to Chancellors or other Seniors Officers

Board of Regents may delegate authority to Chair of the Regents' Facilities Committee

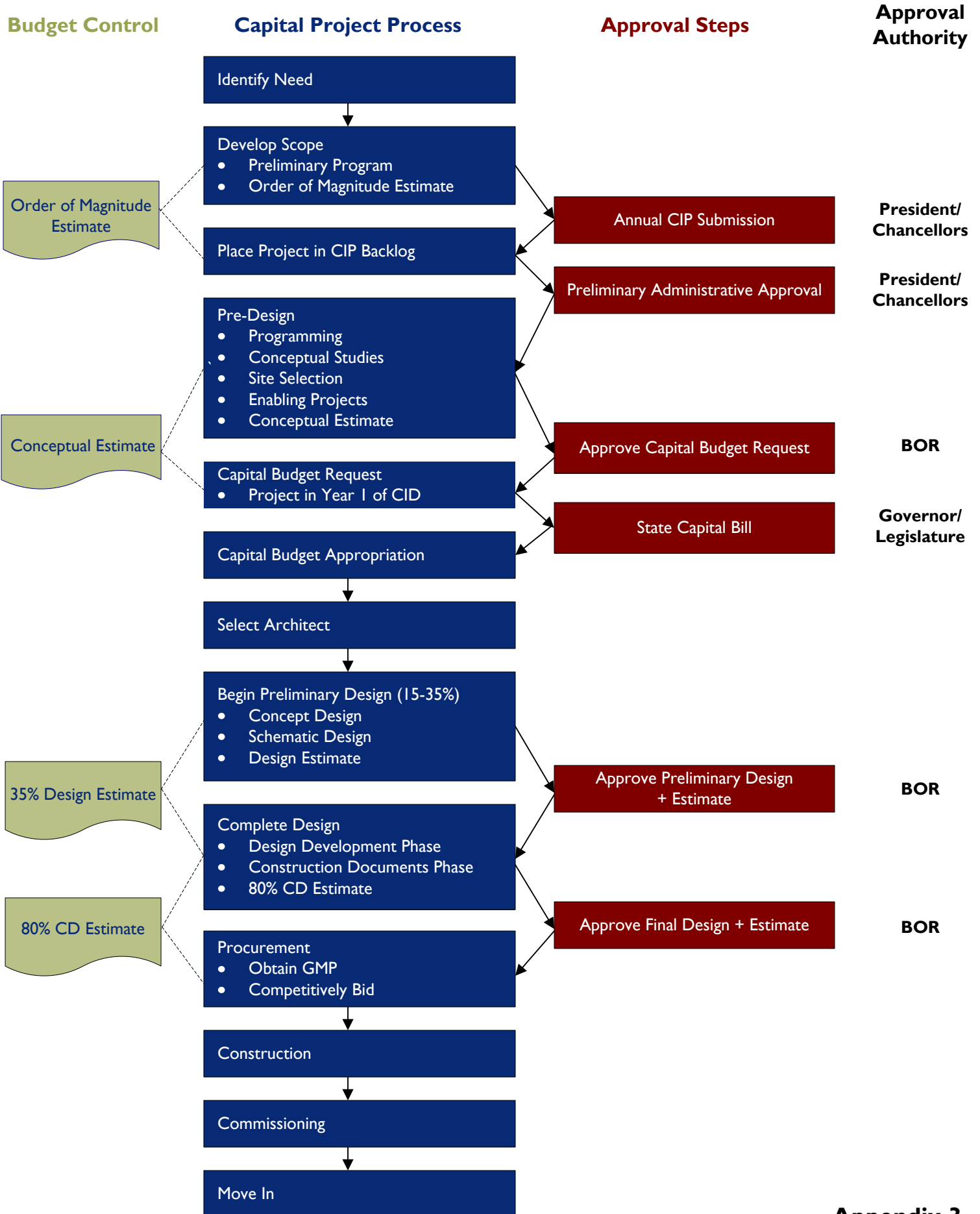
### P05.12.050 Naming of Campus Facilities and Infrastructure

### P05.12.060 Art in University Facilities and Spaces

### P05.12.080 Definitions

- **New Construction**
- **Repair and Replacement**
- **Project Cost**
- **Master Planning**
- **Capital Planning**

# University of Alaska Proposed Capital Project Process Map



# Alternative Project Delivery Methods

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The traditional Design-Bid-Build method of project delivery has typically been used at the University. The Design-Build method has also been used successfully on an infrequent basis. Recommendations for different Project Delivery Methods are based upon project characteristics. Employing the right delivery method is a key factor in the ability to control and manage project outcomes. Using the right delivery method can generate cost savings, provide faster delivery and limit risk for UA. Ultimately, it is a primary tool of risk management. The following material describes the pros and cons of most widely used methods and their related facility types. It has been adapted from work done for the University of Missouri.

1. Traditional Design-Bid-Build
2. Design-Bid-Build with Pre-Construction Services
3. Design-Build, with qualifications-based pre-selection of Design-Build Team
4. Design-Build with Schematic Design required in response to RFP
5. Design-Build using a “Bridge” Design
6. CM-at-Risk
7. CM Agency
8. Developer Delivery

## 1. Traditional Design-Bid-Build

The University engages an architect and consulting engineers (AE) to work with the University to develop the design of the proposed facility. The design work ends with the preparation of working drawings and specifications, called Contract Documents (CDs), based on which fixed price construction proposals for a general contract may be received. The AE works with the University facilities staff to oversee the work in progress, recommending progress and final payments, assisting to prepare and process any change orders, and to administer the contract between the University and the General Contractor. Most projects are built by specialty trade contractors as subcontractors to the General Contractor (GC). The GC is responsible for total price and management of construction.

### *Advantages:*

- Well understood throughout the industry and by most owners.

- Creates desirable direct relationship between design firm and owner.
- Meets all procurement procedures.
- Owner retains leverage until a fixed price is received based on enforceable Contract Documents.

### *Disadvantages:*

- Owner has time and money at risk before a reasonably enforceable complete construction price can be obtained.
- Owner is more exposed to unwarranted contractor-initiated change orders and claims than some other methods. This exposure increases due to growing complexity of building systems and the inability of many architects to coordinate the drawings and specifications integrating architecture and engineering.
- Owner can face frustrating delays and unexpected costs to correct post-construction problems related to design or construction shortcomings.
- Method assumes architects and engineers possess the greatest knowledge of construction technology and cost effective construction materials and methods, but this is not always true. Unnecessary costs with no owner benefits can be built into the design.

## 2. Design-Bid-Build with Pre-Construction Services

This is similar to above, except that a general contractor is selected through a qualifications based process rather than the price alone. The Contractor consults with the AE and the University’s facilities staff, giving constructability, construction operations, schedule and cost advice throughout the design phases. At the end of design, with CDs available, the Contractor confirms a price for the project and the University has the option of authorizing the consulting Contractor to continue as the General Contractor for construction.

In this approach, it is important for the University not to commit to construction with the selected pre-construction services provider until after final design documentation is complete and the total price is reconfirmed. One approach is to set the construction contract award price budget line item in advance, select the service provider based on qualifications and include all services needed in the agreement, including periodic cost estimates and schedule updates. The last action of the pre-construction service

# Alternative Project Delivery Methods

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provider is to quote a firm price for construction based on completed contract documents and competitive subcontract bidding. If the quote is within the previous approval of the University, the Contractor would be selected and continue with construction. If the quote is above the budget, the services provider would not be allowed to bid on the project when bids are received from others.

## *Advantages and Disadvantages:*

Same as Design-Bid-Build above, except that cost and schedule control can be enhanced for major projects by using pre-construction services with a qualified general contractor or construction manager.

### **3. Design-Build with Qualifications-Based Pre-Selection of Design-Build Team**

A general contractor, with an architect and consulting engineers as subcontractors forms a design-build team. This team is selected by the University before design starts. The Design-Build team is referred to as the Contractor and develops the design from schematic through detailed design, including costs and schedules. The Contractor also constructs the project, usually quoting a fixed price for all design and construction before the main construction starts. The University would be required to observe the construction and administration of the Design-Build contract through completion, sometimes via a third party AE, CM or PM firm. This is due to the need for checks and balances, as the Contractor's AE is potentially in conflict of interest with the University.

## *Advantages:*

- Has the potential for integration of more construction best practices inside the design process. This can save costs in labor and materials.
- Contractor has full and single responsibility for all aspects of design and construction, thus reducing the University's exposure to contractor-initiated change orders and claims.

## *Disadvantages:*

- Potential conflict of interest between University and design architect/engineers.
- Lack of competition in construction prices.
- University does not have certainty on range of construction costs when the original commitment is made to the Contractor.

### **4. Design-Build with Schematic Design required in response to RFP**

This is similar to the above method, except that Schematic Design and a construction price are required from competing design-build teams in their proposal responding to the University's RFP. The University would get price confirmations from the selected design-build teams as they go forward with more detailed design. The University retains the right to terminate at the end of CD preparation if the price has increased by more than any interim adjustments approved by the University.

## *Advantages:*

- Has the potential for integration of more construction best practices during design process. This can save costs in labor and materials.
- University receives early proposal with different design solutions, each with a price. University can choose an approach before major commitments are made to contractor.
- The Contractor can hold full and single responsibility for all aspects of design and construction, reducing the University's exposure to contractor-initiated change orders and claims.

## *Disadvantages:*

- Potential conflict of interest between University and design architect/engineers. This conflict of interest can have negative effects for University on costs.
- Selecting a schematic design at the proposal stage does not allow the design process to mature appropriately. The Architect does not have the opportunity to learn the program and work closely with user groups to understand their needs. A good design requires an in depth knowledge of program and user requirements.
- Cost impacts can be mitigated if: the program, budget and schedule are set in advance; the design-build contractor is selected on a qualifications basis, but with the maximum budget and schedule fixed; allow period for review of budget and program at the end of Schematics retaining the right for the University to terminate without cause with a predetermined compensation to the design-build contractor. Require reconfirmation of budget, maintaining original program, at the end of Design Development and Contract Documents, as a condition of compliance.

# Alternative Project Delivery Methods

## 5. Design-Build using “Bridge” design

This is a hybrid form. The University would directly engage an AE firm, called the Owner’s Design Consultant (ODC) to carry out schematic design and the development of design and specifications. This is usually equivalent to the design development level, and can range from 75-100% design. Consulting engineers advise the ODC and the University on system selections and assist in the preparation of the specifications, also known as the Owner’s Minimum Requirements. The bidders propose to convert the Bridging documents into final CDs incorporating all engineering and design requirements, and then build the project. During construction, the ODC would act on behalf of the University to oversee the work and administer the Design-Build contract.

### *Advantages:*

- University gets a fully enforceable contract price in half the time and about half the cost at risk as compared to Design-Bid Build.
- University gets a design-build contract that reduces the University’s exposure to contractor-initiated change orders and claims, as well as post-construction costs arising from divided responsibilities.
- Reduces construction cost for the same end product through application of construction best practices throughout the design process. This is achieved without any loss of control over design or quality for the University.

### *Disadvantages:*

- This is still a relatively new method.

## 6. CM-at-Risk

A construction manager (CM), usually a general contracting company acting in that capacity, is selected early in the design process to consult with the University and the University’s AE on constructability, construction operations and phasing, schedule and cost, with interim estimates at design milestones and a guaranteed maximum price issued during design and confirmed upon completion of CDs. The CM is compensated by a fee and obtains competitive bids for all or most trade contracts, and manages construction on behalf of the University. The CM holds the trade contracts as subcontracts. The AE performs essentially the same services through all phases as an AE in Design-Bid Build.

### *Advantages:*

- The CM comes on board early in the design process to advise the University and its consultants on constructability, cost-effective materials, methods and systems, and continuing feedback on construction cost information and scheduling throughout the design process.
- The CM holds the subcontracts and issues a GMP, Guaranteed Maximum Price, during the design phase. The University gets a more solid estimate of costs earlier in the project than with Design-Bid Build.
- This approach can limit contractor-initiated change orders.

### *Disadvantages:*

- During the initial stages before GMP, the University and CM are partners with the same interests in common. However, with the issuance of the GMP, the CM moves to more of a “contractor” role than a “partner” role.
- A GMP is not always a readily enforceable contract and can lead to unrealistic expectations on the part of the University that cost and budget are firm. Good working relationships between the CM and the University are key to successful delivery with this method.

## 7. CM Agency

A professional construction manager, which might be a construction management, construction program management or construction company with a CM practice is selected as a professional services provider at or before the selection of the AE. The CM confirms the budget, program and schedule. The CM acts as advisor to the University and the University’s AE on constructability, construction operations and phasing, schedule and cost, with interim estimates at design milestones. The CM manages construction on behalf of the University. The CM’s compensation would usually include incentives for control of both cost and time.

### *Advantages:*

- The CM comes on board early in the design process to advise the University and its consultants on constructability, cost-effective materials, methods and systems, and continuing feedback on construction cost and schedule issues.

# Alternative Project Delivery Methods

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- The CM is compensated with a fee and acts as the University's representative in the trade subcontracts. The potentially adversarial relationship between the CM and the University is greatly reduced.
- Total construction cost to the owner should be less than with most other methods, though this is difficult to validate.

## *Disadvantages:*

- There is no truly enforceable contractual obligation by the CM for project completion date.
- The University never really has an upside cost assurance for the full project.
- Multiple contracts for the various trade subcontracts increase the University's exposure to claims and the number of parties that may debate responsibility for claims issues.

## **8. Developer Delivery**

The University enters into an appropriately constructed turn-key type contract with a development firm. The developer typically brings the land to the deal and accepts market, financing and construction risks. Thus, the developer earns higher fees beyond AE fees and building contractor's markup. The following advantages and disadvantages assume that the Developer does bring land and/or significant capital and that the University has appropriate buy-out options throughout the course of the project.

## *Advantages:*

- Projects can move more rapidly as there are fewer internal University procedures and protocols in effect.
- Procurement of the project might not otherwise be financial feasible for the University.
- Economic viability of the project is more objectively tested in the market.

## *Disadvantages:*

- It is more difficult for the University to control the architectural and urban planning details as opposed to other delivery methods.
- The Developer and the University have different objectives. The University looks at long term operating and maintenance and life-cycle costs differently than the Developer who has more of a short term and profitability focus.

# Alternative Project Delivery Methods

## Risks Associated with Alternative Project Delivery Methods

Project Delivery Method	Exposure to Premature Loss of Leverage	Exposure to High Contract Price	Exposure to Contractor initiated change orders	Exposure to Contractor claims	Exposure to Post Construction Correction Delays/Costs
<b>1. Design-Bid-Build</b>	LOW	MEDIUM	HIGH	HIGH	HIGH
<b>2. Design-Bid-Build with Preconstruction Services</b>	LOW	LOW	HIGH	HIGH	HIGH
<b>3. Design-Build, Quals-based Predesign Selection of D/B Team</b>	HIGH	HIGH	LOW	LOW	LOW
<b>4. Design-Build, with Schematic Design response to RFP</b>	MEDIUM	MEDIUM	LOW	LOW	LOW
<b>5. Design-Build using “Bridge” Design</b>	LOW	MEDIUM	LOW	LOW	LOW
<b>6. CM-at-Risk</b>	HIGH	MEDIUM from CM or Subs	MEDIUM from CM or Subs	MEDIUM from CM or Subs	MEDIUM from CM or Subs
<b>7. CM Agency</b>	HIGH from Trade Subs	HIGH from Trade Subs	HIGH from Trade Subs	HIGH from Trade Subs	HIGH from Trade Subs
<b>8. Developer Delivery</b>	HIGH	HIGH	LOW	LOW	LOW

# Alternative Project Delivery Methods

## Recommended Project Delivery Methods based on Project Characteristics

	Project Characteristics	Project Delivery Method
1	Construction cost of less than \$3-4M. Building type moderate to very complex, such as campus residence halls, classrooms, medical and science facilities.	Traditional Design-Bid-Build
2	Construction cost of \$4 – 40M. Building type moderate to very complex, such as campus residence halls, classrooms, medical and science facilities.	Traditional Design-Bid-Build or Design-Bid-Build with pre-construction services or CM-at-Risk
3	Construction cost of more than \$40-50M. Building type moderate to very complex.	CM-at-Risk
4	Construction cost less than \$3-4M. Building type is relatively simple, as structured parking, maintenance and similar building types.	Traditional Design-Bid-Build or Design-Build (Schematics with Proposals)
5	Construction cost of more than \$3-4M. Building type simple.	Design-Build with “Bridge” Design
6	Medium to large interior fit-out, R&R projects	Traditional Design-Bid-Build



# University of Alaska

## Total Project Cost / Schedule Estimates

Project Name: \_\_\_\_\_  
 Date: \_\_\_\_\_

### Estimated Milestones

	Start	Finish
Programming	_____	_____
Design:	_____	_____
Construction:	_____	_____

### Funding Sources

State Appropriation	
General Obligation Bonds	
University Debt	
Gifts	
University Operating Budget	
MAU Operating Budget	
Other - specify	
<b>Total</b>	<b>\$0</b>

### Budget

Building:	
1.	
2.	
<b>Total</b>	<b>\$0</b>

### Current Estimate

	Units	Unit Costs	Total
<b>1. Building 1</b>			
A. Laboratory	_____ sf	_____ \$/sf	_____ \$0
B. Office	_____ sf	_____ \$/sf	_____ \$0
C. Classroom	_____ sf	_____ \$/sf	_____ \$0
<b>Total</b>	<b>0 sf</b>	<b>#DIV/0! \$/sf</b>	<b>0</b>
<b>2. Building 2</b>			
A. Laboratory	_____ sf	_____ \$/sf	_____ \$0
B. Office	_____ sf	_____ \$/sf	_____ \$0
C. Classroom	_____ sf	_____ \$/sf	_____ \$0
<b>Total</b>	<b>0 sf</b>	<b>#DIV/0! \$/sf</b>	<b>0</b>

# University of Alaska

## Total Project Cost / Schedule Estimates

Project Name: \_\_\_\_\_

Date: \_\_\_\_\_

3. Site Development		
A. Master Plan Issues	2%	\$0
B. Roads, Paving, Sidewalks		
C. Landscaping		
D. Misc		

4. Utilities

5. Parking	
A. New Spaces	
B. Misc	

6. UA Construction Related Activities

7. Special Construction Features	
A. LEED Premium	
B. OCIP	
C. Misc 1	
D. Misc 2	
E. Misc 3	

Current Year Estimated Construction Costs 0 sf #/DIV/0! \$/sf \$0

8. Escalation  yrs@  % \$0

9. Estimated Construction Costs @ mid point 0 sf #/DIV/0! \$/sf \$0

**University of Alaska**  
Total Project Cost / Schedule Estimates

Project Name: \_\_\_\_\_  
Date: \_\_\_\_\_

**10. Soft Costs**

A. Professional Fees	<input type="text"/>	%	<input type="text"/>	\$0
Reimbursables				
B. Survey				
C. Geotechnical Analysis				
D. CM Pre-GMP Fee				
E. Development or Developer's Fee				
F. Project Management Fees	<input type="text"/>	%	<input type="text"/>	\$0
G. Permits/L&I/UCC Inspections				
H. Start-up & Training				
I. Code Costs				
J. Inspection Services				
K. Commissioning Fees	<input type="text"/>	%	<input type="text"/>	\$0
L. Moving Costs				
M. Travel/Meals/Printing/Postage				
N. Project Contingency	<input type="text"/>	%	<input type="text"/>	\$0
<b>Total Estimated Soft Costs</b>	<input type="text" value="#DIV/0!"/>	%	<input type="text" value="#DIV/0!"/>	\$/sf <input type="text" value="\$0"/>

**Total Estimated Project Costs (w/o FF&E)**  sf  \$/sf

**11. FF&E**

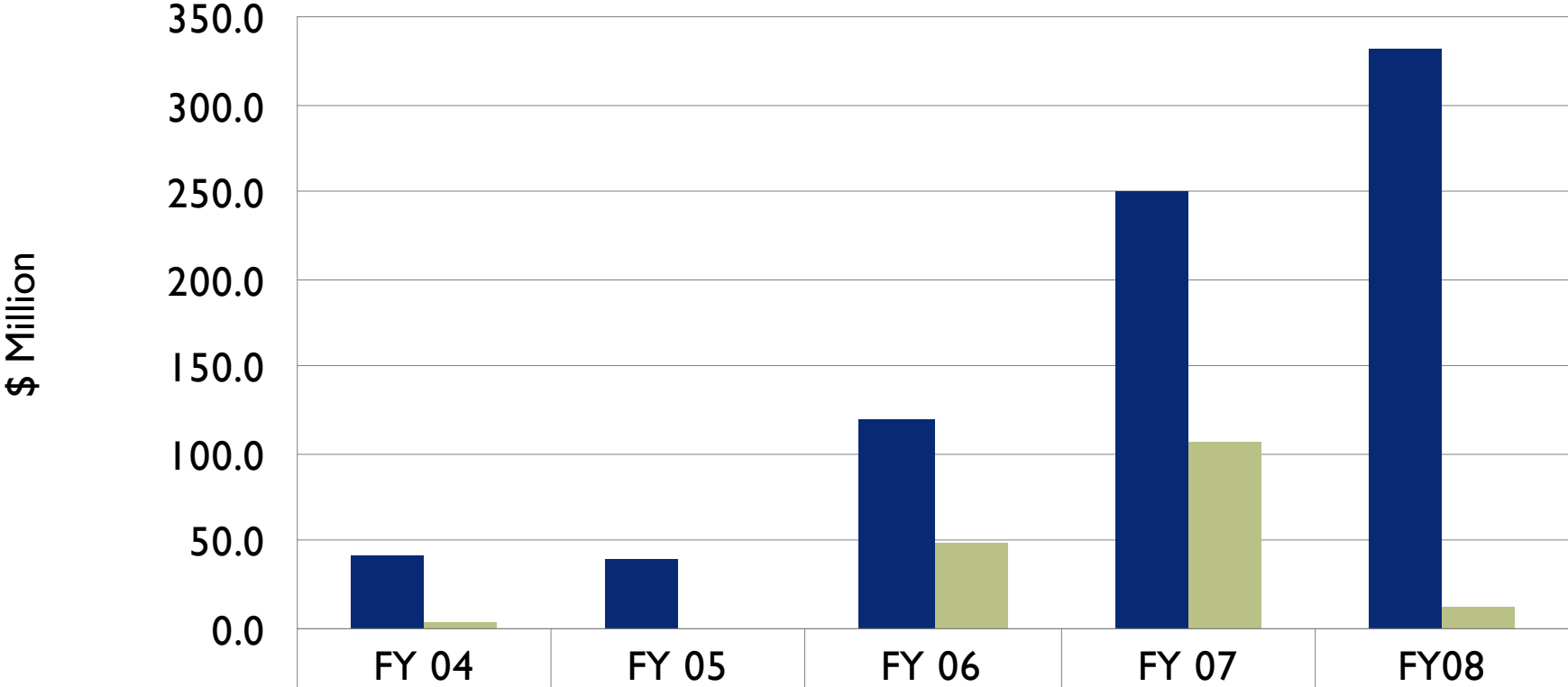
A. Design Fees (as a % of the Prof Fee)	<input type="text"/>	%	<input type="text"/>	\$0
B. FF&E	<input type="text"/>	%	<input type="text"/>	\$0
C. Janitorial Equipment	<input type="text"/>	%	<input type="text"/>	\$0
D. Telecommunications Electronics	<input type="text"/>	%	<input type="text"/>	\$0
E. AV Equipment	<input type="text"/>	%	<input type="text"/>	\$0
F. Misc 1				
G. Misc 2				
H. Misc 3				
<b>Total FF&amp;E Costs</b>				<input type="text" value="\$0"/>

**12. Total Estimated Project Costs (w/FF&E)**  sf  \$/sf

**13. Current surplus/(deficit):**

Notes:

# State Appropriation History



Request	42.5	40.3	118.8	250.4	332.3
Appropriation	4.1	0.4	48.1	107.9	12.3

Capital Project Pipeline - 02/22/07

Sorted by FY07 Priority

Project Name	Priority	Sr. Officer	Program GSF	Cost Cost FY07	Start Date	Completion Date	Source of Estimate	Gift %	Debt %	CRSP %	Other	Comments
<b>APPROVED PROJECTS UNDERWAY- 2006 to 2011</b>												
<b>Under Construction</b>												
Project 1 (dry lab)	0	Dean 1	82,000	59.0	2005	2007	GMP	42%	38%	20%	-	
Project 2 (wet lab)	0	Dean 2	25,000	30.0	2006	2007	GMP	24%	76%	-	-	
Street & Utilities infrastructure	0	VP 1	n/a	25.0	2006	2008	GMP	40%	60%	-	-	
Housing project	0	VP 2	219,200	104.0	2006	2008	GMP	-	100%	-	-	
Research 1	0	Dean 3	194,686	120.0	2007	2009	GMP	80%	20%	-	-	
Utilities project	0	VP 1	n/a	20.0	2006	2007	Estimate	-	100%	-	-	
<b>In Design</b>												
Project 3 (classroom, office)	0	Dean 3	210,000	142.0	2008	2010	DD Estimate	85%	15%	-	-	
Underground parking	0	VP 1	n/a	43.0	2007	2010	DD Estimate	-	100%	-	-	
Surface parking	0	EVP	n/a	2.0	2006	2006	Estimate	-	100%	-	-	
Cancer Research Facility	0	VP 1	363,000	240.0	2008	2010	Benchmark data	80%	20%	-	-	
Sailing center	1	VP 2	21,700	13.0	2010	2011	Concept Design	100%	-	-	-	Approved through Concept Design
<b>APPROVED PROJECTS ON HOLD - 2011 to 2016</b>												
Research 2	1	VP 3	162,000	165.0	2011	2014	Benchmark data	80%	20%	-	-	\$150m in 2005 \$ escalated 10%
Theater/performance lab	1	Dean 3	36,000	31.0	tbd	tbd	Concept Design	100%	-	-	-	need program and site review
Pedestrian Bridge	1	VP 1	n/a	8.0	tbd	tbd	Benchmark data	100%	-	-	-	
<b>BACKFILL and RENEWAL OPPORTUNITIES - 2006 to 2016</b>												
Housing renovation	3	VP 2	187,000	tbd	tbd	tbd	Concept design	-	100%	-	-	
Renovation project	new	Dean 3	145,000	75.0	2010	2011	Concept design	-	100%	-	-	
Renovation project	5	VP 1	67,750	21.0	2008	2009	Benchmark data	-	100%	-	-	study underway
Multiple phased renovation	4	VP 1	484,597	200.0	2011	2016	Allowance	50%	50%	-	-	needs project definition
Capital Renewal - Phase 2	2	VP 1	n/a	100.0	2011	2016	Allowance	-	-	-	100%	
Office building	4	VP 1	200,000	60.0	2011	2012	WAG	-	100%	-	-	
Science Building	3	Dean 1	350,000	tbd	2011	2013	tbd	80%	20%	-	-	check cost and gift/ debt
Renovation project	5	VP 1	128,000	tbd	2014	2016	tbd	tbd	tbd	tbd	-	
Renovation project	n/a	VP 2	73,500	72.0	tbd	tbd	tbd	tbd	tbd	tbd	tbd	Need program
Renovation project	new	Dean 3	tbd	15.0	tbd	tbd	Benchmark data	tbd	tbd	tbd	tbd	
Renovation project	new	VP 1	tbd	50.0	tbd	tbd	WAG	-	100%	-	-	check cost and scope
Renovation project	new	VP 1	116,000	tbd	tbd	tbd	tbd	tbd	tbd	tbd	tbd	
<b>SITE RENEWAL PROJECTS</b>												
Street renovation project	new	VP 1	n/a	10.0	2010	2011	WAG	-	100%	-	-	
RR crossing project	new	VP 1	n/a	1.0	2010	2010	Concept design	-	100%	-	-	
Campus upgrade	new	VP 1	n/a	8.0	2009	2010	WAG	-	100%	-	-	
Landscape improvement	new	VP 1	n/a	10.0	2011	2012	WAG	-	100%	-	-	
Athletic project	4	VP 3	n/a	6.2	2009	2009	Concept design	50%	50%	-	-	
<b>OTHER PRIORITY PROJECTS</b>												
Research facility	new	VP 2	n/a	tbd	2009	2010	WAG	-	100%	-	-	needs project definition
Research facility	new	VP 2	n/a	tbd	2008	2010	WAG	-	100%	-	-	needs project definition
High Performance Computing Center	new	VP 1	tbd	tbd	tbd	tbd	tbd	tbd	tbd	tbd	tbd	
UG Lab	new	VP 2	29,000	tbd	tbd	tbd	tbd	tbd	tbd	tbd	tbd	Could be funded as Main Group Reno
Research Lab	3	Dean 4	140,000	93.0	tbd	tbd	WAG	50%	50%	-	-	
Underground Garage	-	VP 1	tbd	45.0	tbd	tbd	Benchmark data	-	100%	-	-	possibly on Medical Lot
Utilities - Phase 2	new	VP 1	n/a	20.0	2008	2010	Estimate	-	100%	-	-	
Utilities - Phase 3 ((Cogen))	new	VP 1	n/a	115.0	2011	2016	WAG	-	100%	-	-	
<b>HOUSING CAPITAL NEEDS</b>												
Housing renovation	4	VP 2	150,000	75.0	2011	2011	Benchmark data	-	100%	-	-	
Housing renovation	3	VP 2	150,000	60.0	tbd	tbd	Benchmark data	100%	-	-	-	
Housing renovation	4	VP 2	168,000	75.0	2010	2010	Benchmark data	50%	50%	-	-	
Housing renovation	5	VP 2	92,336	75.0	2012	2012	Benchmark data	-	100%	-	-	
Housing renovation	new	VP 2	tbd	tbd	2007	2009		-	-	100%	-	
Housing renovation	new	VP 2	tbd	tbd	tbd	tbd		tbd	tbd	tbd	-	
<b>LEGACY PROJECTS</b>												
Research	4	VP 3	n/a	tbd	tbd	tbd	No data	-	100%	-	-	need more info
Auditorium renovation	4	VP 2	42,200	tbd	tbd	tbd	No data	-	-	100%	-	Partially/ totally underway?
Recreation project	4	VP 2	45,000	13.0	tbd	tbd	Benchmark data	100%	-	-	-	
Sports Center	4	VP 2	80,000	tbd	2016	2018	No data	100%	-	-	-	
Student facility	4	VP 2	tbd	tbd	tbd	tbd	No data	50%	50%	-	-	
Performing Arts Facility	5	VP 4	tbd	tbd	tbd	tbd	No data	100%	-	-	-	Revisit?
Academic Renewal	5	VP 3	343,000	tbd	tbd	tbd	No data	-	100%	-	-	Revisit?
New Facility on Campus	5	VP 4	tbd	tbd	tbd	tbd	No data	-	100%	-	-	Revisit?
Research renovation	5	Dean 4	134,390	tbd	tbd	tbd	No data	50%	50%	-	-	after Chem E new building? Or renewal
Research renovation	5	Dean 1	212,000	tbd	tbd	tbd	No data	-	100%	-	-	24 demo/ 26 renewal?
Health care renovation	5	VP 1	67,000	tbd	tbd	tbd	No data	-	-	100%	-	Incremental CRSP projects
Research facility	5	VP 2	102,000	tbd	tbd	tbd	No data	-	100%	-	-	Should this be on the list?
Teaching center	3	VP 5	80,000	tbd	tbd	tbd	No data	100%	-	-	-	

Priority 0 - Approved by Building Committee + Executive Committee  
 Priority 1 - Endorsed by Building Committee  
 Priority 2- Endorsed by CRSP  
 Priority 3- Endorsed by Senior Officer  
 Priority 4- Endorsed by DLC  
 Priority 5-Unprioritized in FY06 and FY07  
 new - Projects that did not appear on FY06 Capital Plan

# Master Plan Model Policies and Guidance

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The University should consider seeking consultation on the structure of a Master Plan Policy from an outside firm that specializes in campus master plans. UAA is currently using Ayers Saint Gross of Baltimore to help develop a subarea campus plan for the Anchorage Health Sciences complex. This firm is one of the most respected university master planning firms in the Country. They may be able to provide expert advice to help the University formulate a high level policy on master planning.

Should the University choose not to seek advice from a master planning firm, the following policy concepts were provided by Bill Anderson based on his experience in higher education and as a planning officer for the Naval Facilities Engineering Command:

- The Board policy should be short and at a high level – not a regulation but a policy. The Administration should issue an implement regulation similar to Pennsylvania State System of Higher Education.
- Master plans should have a 20 – 25 year horizon – very long term, legacy, strategic planning orientation.
- They should be updated every 7 – 10 years.
- They should be amended as needed in between formal updates.
- The Board should approve the plans and any amendments.
- Plans should include Guiding Principles that guide the development of the campus.
- Plans should be framework plans, or “opportunities plans” (PSU).
- Some things should be prescriptive. This is the skeleton (or framework) and would include: - Roads - Pedestrian ways - Bikeways- Utility infrastructure - Green space, plazas, and civic spaces - Environmentally sensitive areas like wetlands - General neighborhoods with broad geographic boundaries (e.g., residential areas, science district, etc.)
- Capital project funding is dynamic and unpredictable. Capital plans will vary with changing priorities of the University and funding opportunities not known when a plan is developed. Building sites should be

shown in the Master Plan, but not definitive with respect to program. Do not show exactly what building or project goes on each site, but instead include GSF potentially developable on each potential building “opportunity” site. - Use this opportunities plan as the template for the capital plan. Superimpose capital projects on the master plan. Pick the best site for the project, “just in time”.

- Establish a formal site selection process that complements the master plan and respects campus master plan Guiding Principles. This will inform the actual site chosen for a capital project.
- Master plans should include general “design guidelines” which drive consistent architectural development of a campus or campus precincts while allowing flexibility for excellent design.
- When capital projects are presented for approval, the Administration needs to verify that they are “consistent” with the Board approved master plan. If a project is not, then a justification needs to be given and/or an amendment to the master plan proposed at the time the project is proposed.
- Master plans for outlying campuses need to be treated differently than the three MAU campuses.

Below are model master plan policies from Minnesota State Colleges and Universities System, Pennsylvania State System of Higher Education, and Penn State.

## **Minnesota State Colleges and Universities System Policy on Master Planning**

### **6.4 Facilities Planning**

#### *Part 1. Policy Statement*

It is the policy of the Board of Trustees to require a Facilities Master Plan following campus adoption of a master academic plan for all colleges and universities to assure long-range planning of college and universities facilities. It is the policy of the Board of Trustees that the facilities of state colleges and universities are to be used primarily for purposes of fulfilling the college’s or university’s missions of teaching, research, and public service.

# Master Plan Model Policies and Guidance

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## *Part 2. Responsibilities*

The president of each college and university is responsible for developing and maintaining an ongoing Facilities Master Plan. Facilities Master Plans must be consistent with systemwide guidelines. Campus development, siting of new buildings and structures, and renovation of existing facilities shall be consistent with the Facilities Master Plan. The president of each college and university is responsible for assuring appropriate use of all facilities and grounds on their campuses.

The president of each college and university is responsible for developing and maintaining a current facilities assessment and record of space utilization as a base for multi-year capital program planning requests.

## *Part 3. Accountability/Reporting*

All Facilities Master Plans and periodic updates, and deviations therefrom, will be approved by the chancellor.

## **Pennsylvania State System of Higher Education, and Penn State Policy of Masterplanning**

Please reference attached documents.



# PA State System of Higher Education Board of Governors

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Effective: July 13, 2000

Page 1 of 7

## ***POLICY 2000-02: CAPITAL FACILITIES PLANNING, PROGRAMMING, AND FUNDING***

See Also:

Adopted: July 13, 2000

Amended:

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### **A. Policy**

1. General—All facilities projects submitted for inclusion in an annual capital appropriation request or submitted for funding through a State System of Higher Education bond issue must be approved by the Board of Governors according to the capital facilities planning, programming, and funding policies established herein.
2. Capital Facilities Planning—The State System will develop and maintain a capital facilities planning process for determining capital facilities requirements. The process will include, at a minimum, a universally accepted facilities inventory database, a standardized method of auditing and assessing the condition of each facility, a facilities master plan for each university prepared according to published guidelines, and criteria or guidelines for determining space requirements to meet the educational and quality of life standards desired for each university. Only those projects that satisfy a valid space deficiency, a System or Commonwealth educational requirement, or renew an existing facility for a valid mission requirement will be submitted for Board approval.
3. Capital Facilities Programming—All facilities projects submitted for inclusion in a State System capital appropriation request or System-financed capital project will be based on a detailed project planning document. The prepared document will be in response to the budget guidance published by the Board, the university mission requirement to be supported, and the Commonwealth budget guidance, and/or work force development requirements.

Space categorized as general educational space, for which the university will seek funding through the funding formula, may not be made through lease,



new construction, building additions, or conversion of space categorized as auxiliary without Board approval.

The Finance, Administration, and Facilities Committee of the Board will review each project before it is recommended for Board approval.

4. Capital Facilities Funding

a. Capital Funding for Educational Facilities—Annually, the Commonwealth provides a capital appropriation to fund some capital facilities projects for System educational facilities. Private gifts, grants and partnerships, and System operating funds also have been used to fund capital facilities requirements. Capital appropriations identified for allocation by the System for authorized capital appropriation projects will be approved by the Board before release by the Budget Office. In FY 1999/2000 the System and the Commonwealth formulated a capital funding plan for System capital facilities projects in the Academic Facilities Renovation Program and the Academic Program Directions and Capital Facilities Investments for Pennsylvania's Future Program. Recognizing the value of these programs, in order to utilize most effectively available capital appropriations at the conclusion of these programs, the Board will submit requests for Commonwealth capital appropriations funding of System educational facilities projects according to the following criteria:

- (1) Except for special circumstances as approved by the Board, projects requested for construction of economic development facilities must serve both the university and the community with shared programming and use, and may be funded under the Commonwealth's guidelines of Capital Redevelopment Assistance Program requirements. Fifty (50) percent non-state participation is required with state funds dispersed over multiple years.
- (2) Except for special circumstances as approved by the Board, public/private alliances or private sector support of at least 50 percent of the project cost will be raised for all new academic facilities that satisfy System educational requirements and/or contribute to global competitiveness and work force needs. Those projects receiving the greater private support will receive a higher priority recommendation for public funding.
- (3) Full Commonwealth funding may be requested for projects when alternative funding sources cannot meet the life cycle renewal, renovation, or replacement requirements of facilities or supporting infrastructure systems:

- (a) to maintain health and safety standards, and/or operational continuity of utility and support systems;
  - (b) to achieve regulatory compliance with existing and/or new legislation; and/or
  - (c) for life cycle renewal, renovation, or replacement to maintain safe occupancy, efficient operations, and building code habitability standards of existing facilities.
- (4) Utility projects may be funded or financed from Educational and General revenue to the extent feasible.
- (5) Except for special circumstances as approved by the Board, System bond financing for educational facilities will be used only for mutually agreed joint Commonwealth-System programs or as bridge loans until private sector pledges are satisfied.
- b. Capital Funding for Auxiliary Projects—Since 1984, the System has provided bond financing for System auxiliary projects funded by student fees. The Board must approve projects submitted for funding through a System bond issue before bond proceeds are released for the project. Due to the magnitude of the requirement, the Board will approve financing of auxiliary facilities projects according to the following criteria:
- (1) New facilities satisfying a valid requirement to improve the quality of student living or university parking structures first must be pursued through public/private alliances and financed on a user fee self-liquidated basis through appropriate not-for-profit entities. Only after such pursuit fails to provide an acceptable public/private alliance will the Board consider approving System bond financing of the project.
  - (2) The Board may approve System bond financing of projects to renew, renovate, or reconfigure existing Commonwealth-owned auxiliary facilities when it deems that public/private alliances are not practical or feasible.
  - (3) Students may elect, through a student referendum, to raise student fees sufficiently to finance construction of new or renovation of existing recreational and student activity facilities on university property through System bond financing or other appropriate not-for-profit entities.

## **B. Background**

Act 188 requires Board of Governors' approval of System building projects submitted to the Office of the Budget Secretary. This policy establishes a System Capital Facilities Planning and Programming Process (CFP3) for determining capital facilities requirements, a requirement for submission of a detailed planning document to identify the university mission and academic programs to be supported by the project, and a process for allocation of available funding for projects authorized by the legislature from the requests.

Modern educational programs inherently are dependent upon the quality of the facilities in which the programs are conducted. To support the State System's mission of providing a quality education for its students, quality facilities must be built and maintained routinely. To this end, the CFP3 must be implemented System-wide to establish a uniform method for determining requirements and allocating limited resources. Limited capital appropriations must be used to support those projects most important to the System and the Commonwealth.

Since distribution of the State System's resources is determined, in part, by the relative distribution of the general educational space according to the State System's funding formula, changes that impact the formula must be approved to avoid inadvertent or unwarranted modifications to the distribution.

In addition to providing the opportunity for its citizens to obtain a college education at an affordable cost, the Commonwealth's higher education institutions must contribute to training its citizens for the Commonwealth's businesses and public service, and assist in work force development to sustain a competitive posture in today's global marketplace.

## **C. Purpose**

This policy establishes:

1. the requirement for developing and maintaining a capital facilities planning and programming process and assigns responsibilities and procedures for implementing the program within the State System;
2. the requirement for submission of a detailed project planning document with each facilities project submitted for inclusion in a System capital appropriation request or System-financed capital project and assigns responsibilities and procedures for submission, review, and evaluation of the specified information;
3. the procedures for allocating capital appropriation funding identified for allocation by the System for authorized capital appropriation projects;

4. the requirement for pursuing public/private alliances to finance improvements in the quality of student living on a user fee self-liquidating basis;
5. the requirement for pursuing public/private alliances or private sector contributions of at least 50% for new academic facilities; and
6. the requirement for funding economic development facilities projects under the Commonwealth's Capital Redevelopment Assistance Program requirements.

#### D. Definitions

- **Auxiliary Facilities**—those facilities that house and are funded as entities that furnish goods and services to students, faculty, or staff and charge a fee directly related to, although not necessarily equal to, the cost of the service. Examples of auxiliary facilities are residence halls, dining halls, student unions, and recreation halls constructed through student fees. These facilities generally are classified as certain general use (categories 630 and 670) and residential (category 900) facilities in the Postsecondary Education Facilities Inventory and Classification Manual.
- **Capital Redevelopment Assistance Program**—a Commonwealth program that provides bond financing of capital facilities that contribute to the economic welfare and revitalization of the Commonwealth.
- **Detailed Project Planning Document**—a comprehensive statement of the nature and concepts of the project. The statement includes site identification, space analysis by facilities categories, utility service availability analysis, and a detailed description of the desired outcome to support the programs to be conducted in the facility. A square foot estimate of the construction costs, total project costs, and annual operating costs associated with the completed project, along with the associated impact on the operating budget, also is included in the statement. A feasibility study may be substituted for the detailed project planning document.
- **Facilities Inventory**—a listing of the facilities on each university campus, branch campus, educational center, or other State System entity, including leased space, by building and room category, according to a standard classification and measurement system.
- **Facilities Master Plan**—a planning document that specifies the facilities and their existing or planned locations required to conduct the mission of each State System university based upon the academic, financial, and strategic priorities of the university, as endorsed by the State System.

- **Facilities Project**—a project funded by specific Commonwealth appropriations or financed by the State System for maintenance, repair, or renovation of existing buildings, structures, or infrastructure; or for construction of new buildings, structures, or infrastructure at State System institutions.
- **Facility Replacement**—Replacement of an existing facility at the same square footage or within approved space guidelines because renewal/renovation of the facility is not feasible, practical to accommodate modern instruction or construction methods, or economically viable, but a facility is required for continued performance of the function conducted in the facility.
- **Feasibility Study**—a thorough study of a proposed facilities project to evaluate its economic, financial, technical, functional, environmental, and cultural advisability, which results in a programmatic diagram of the project showing a possible floor plan and architectural design that satisfies the desired facility requirements.
- **General Educational Facilities**—all facilities, including leased space, other than auxiliary that directly or indirectly support the mission of the State System. The facilities are classified as classroom (category 100); laboratory (category 200); office (category 300); study (category 400); special use, such as athletic (category 500); general use (category 600); support (category 700); and health care (category 800) facilities.
- **Public/Private Alliances**—agreements between an entity or entities of the State System and individuals, businesses, corporations, or other organizations that join the parties to share arrangements and responsibilities for financing, operation, and use of public facilities. In no case will the alliance take on the attributes of a joint venture as prohibited by the Constitution.
- **System Capital Appropriation Request**—the annual facilities projects request submitted by the Board to the General Assembly and the Governor’s Office for inclusion in a capital budget project itemization act. Projects included in a capital budget act not previously approved by the Board will be submitted to the Board for authorization prior to submission for release of funding and will be subject to the requirements of this policy.

## E. Procedures and Responsibilities

1. The chancellor, in consultation with the presidents, will develop and publish a State System capital facilities planning and programming process. The process will include preparation and continuous updating of a facilities inventory, condition assessment, space planning guidelines, and facilities master plan for each university, branch campus, and education center. An electronic database will be used to record and update the data. The System-wide inventory data of existing facilities and the facilities condition assessment of existing facilities will be updated annually in conjunction with

the annual capital budget program. State System universities will prepare facilities master plans based upon the published guidelines. Facilities master plans will be updated as required to reflect changes that occur each year. Life cycle renewal profiles will be prepared for each facility and capital renewal project submitted based upon the least cost repair/renovation cycle.

2. The chancellor, in conjunction with the Finance, Administration, and Facilities Committee of the Board, will develop and publish specific requirements to be included in the detailed project planning documents. The requesting university will submit the required planning documents for each project requested in a capital appropriation act or for System bond financing. The Finance, Administration, and Facilities Committee, or the committee's designee, will review the detailed planning documents, along with the documents specified in the annual budget guidance, and identify the projects to be forwarded for Board approval.
3. Annually, by the third quarterly meeting of the Board, the Finance, Administration, and Facilities Committee will publish the facilities planning, programming, and funding criteria for System capital facilities projects.
4. The Finance, Administration, and Facilities Committee will review the capital facilities planning and programming documents submitted by System universities in accordance with this policy for consideration in the annual capital appropriation request, and recommend for Board approval, in priority order, the list of capital projects to be included in the annual capital appropriation request or the annual auxiliary facilities program.
5. Before funding is released for capital appropriation projects for which funding is identified for allocation, the Finance, Administration, and Facilities Committee will review all authorized projects and establish a plan for funding those authorized projects that best satisfy the System's and Commonwealth's needs.
6. The chancellor will prepare administrative procedures acceptable to the Finance, Administration, and Facilities Committee to implement these procedures.

**F. Repeals**

Board of Governors' Policy 1995-01, *Capital Facilities Programming and Planning*, and Board of Governors' Policy 1996-02, *Programming of Capital Facilities Projects*, are repealed upon adoption of this policy.

**G. Effective Date**

July 13, 2000.

# Pennsylvania State System of Higher Education Facilities Manual

## Volume VI-C University Master Planning

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### **Requirement**

The quality of education provided on a university campus is in large part dependent upon the quality of the facilities where the instruction is conducted. The cost of education is also in large part dependent upon the quality of facilities at a university. Facilities master planning provides an effective and orderly method for erecting and maintaining university facilities to conduct a quality education program at a reasonable price.

The Board of Governors (BOG Policy 2000-02) requires each State System of Higher Education university to maintain a current facilities master plan for programming the renovation and construction of capital facilities projects for the university and its branch campuses. In order to prepare an effective master plan, data which addresses the university's strategic goals and academic objectives which form the basis for the university's existence, must be incorporated in a plan for erecting and maintaining supportive physical facilities. The facilities master plan shall therefore, address the following contents: a strategic review, functional analysis, physical analysis, solution development and planning documentation. The plan shall also address the following issues or trends: organization, financial capabilities, enrollment, academic quality, academic programs, space allocation, site parameters, building architecture, and technology utilization.

The master plan document shall address the components and issues as short-term (0 to 5 years), mid-term (5 to 10 years), and long-term (10 to 20 years). Assumptions/premises upon which each component or issue is based shall be clearly identified in the documentation. The assumptions used in the additional System's strategic planning document shall be used as a basis for the plan. Assumptions for the short-term shall include maintaining the enrollment and complement bands. Funding for both the educational and general and capital budgets will not exceed the rate of inflation and/or the historic funding rates, and funding will be allocated based on the approved funding formula. In accordance with BOG Policy 2000-02, the plan shall be updated annually. Annual updates may be as brief as a review of the data to verify the information is current, to a complete change in course of action chosen to develop the plan.

### **Basic Planning Data**

Prior to hiring the consultant for assisting in development of the solution and plan documentation, the university should review their strategic and academic planning, and provide the information or review results to the following areas.

### ***Strategic Review***

The strategic review shall include:

- The university's mission statement, strategic plan, and realistic financial plan to implement the strategic plan;
- A market enrollment analysis which includes a demographic analysis, enrollment management analysis, peer institution study, and marketability analysis; and
- Identification of the university's academic programs including validation and prognosis of the existing programs, its academic goals, and alignment of programs both with its goals and with available facilities.

### ***Functional Analysis***

The functional analysis shall include:

- Utilization of existing facilities, which addresses facilities operations and utilization for the university's programs; and
- A facility space assessment which addresses inventory of existing space by category and space requirements compared to System space planning guidelines.

### ***Technology***

The technology issues will address:

- Campus communication systems;
- Computer networking/campus network wiring; and
- Classroom technology.

### ***Organizational Review***

The organizational review shall include:

- Identification of planned organizational changes expected during each of the planning periods;
- Review of the administration or policy changes that would impact the results of the plan; and
- Examination of the regulatory requirement that impact implementation of the plan or that guide the structuring of the plan.

### ***Financial Capabilities***

The financial capabilities review shall include:

- A review of income and the sources of income the university has available for realistically implementing the strategic plan, academic program and the physical facilities plan, including fund raising, bond loan capabilities, grants, etc.;
- A review of the university's current expenses, debt service, and financial reserves; and
- A projection of the expected increase/decrease in expenses resulting from implementing the plan.

### ***Enrollment***

The review of enrollment shall address:

- The projection for future enrollment based on historic trends and demographic projections;
- The recruitment capabilities of the university;
- The retention history, and projections used to develop the plan; and
- Identification of current and projected enrollment target groups.



### ***Academic Quality***

The academic quality review shall include:

- Ranking or reputation with peer or aspirant institutions;
- Accreditation history;
- Adequacy of the library and other academic support services;
- Student faculty ratio; and
- Faculty recruitment/retention program.

### ***Academic Programs***

The academic program review should include information concerning:

- A brief history of enrollment, by program;
- Projected or anticipated changes in programs; and
- Program match with current and projected market and available university resources.

## **Contents of the Facilities Master Plan**

The facilities master plan shall contain, in written form, the following contents. The information contained in this section is usually obtained with the help of a consultant.

### ***Physical Analysis***

The physical analysis shall include:

- The interface and relationship between the campus and the community with regard to land use and zoning, pedestrian and vehicular circulation, physical barriers, and campus image; and
- Identification of the existing buildings and building systems emphasizing appropriateness of use, utility services, building density, functional relationship and accessibility according to ADA criteria.

### ***Solution Development***

The solution development component for implementing the strategic plan shall address:

- The development potential of the university real estate and the opportunities and constraints for future development;
- The evaluation of options, including strategies and costs for implementing identified options citing the criteria used for the evaluation; and
- The feasibility of the university's ability financially to achieve implementation of the options.

### ***Space Allocations***

The space allocations shall address current space deficiencies (as determined by comparison of existing space with the State System of Higher Education space guidelines) with consideration of:

- Alignment of needs with availability;
- Projected changes in needs;
- Size/configuration of classrooms and laboratories;
- Number and design configuration of residence rooms; and
- Availability of athletic/recreation facilities.

### ***Site***

The review of the site issues should address:

- Campus image/entries/open space/landscaping plan/open spaces/landscaping plan/visibility of the university;
- Interfaces with neighbors and growth potential;

- Adjacent land uses/neighborhood context;
- Physical characteristics/topography/climate;
- External control such as zoning, building code enforcement, support services, i.e., fire protection, utilities, etc.;
- Campus land use or zones;
- Vehicular and pedestrian circulation include accessibility according to ADA standards;
- Parking;
- Campus history; and
- Architectural significance.

### ***Buildings***

The buildings, as a whole, should be addressed to include:

- Functional location appropriateness, including images/entries;
- Appropriateness of use;
- Compatibility of use;
- Flexibility and growth capacity/potential;
- Adequateness of space;
- Physical conditions and architectural compatibility/finishes;
- Code compliance;
- Accessibility by customers, employees, and services entities;
- Building circulation; and
- Maintenance condition/maintenance backlog, energy efficiency, building condition, hazardous materials, etc.

### **Infrastructure**

The adequacy and location of the supporting infrastructure should be addressed to include:

- Existing and required for plan implementation;
  - a. storm sewer
  - b. sanitary sewer
  - c. water system
  - d. gas service
  - e. electrical system
  - f. roads
  - g. parking
  - h. telecommunications networks
  - I. fire alarm system
  - j. others
- Code compliance;
- Flexibility and growth capacity/potential;
- Physical condition; and
- Maintenance/repair/renovation/replacement requirements.

### **Process**

An orderly, effective, and efficient process for gathering data and preparing plan documents that satisfy the System's requirements for a facilities master plan is shown in Figure 1. As stated in an article appearing in the fall 1993 issue of the *Facility Manager* magazine entitled "Planning for Master Planning: Setting Realistic Expectations," by John R. Reeve, AIA, and Marion B. Smith, AIA:

If a master plan responds only to the existing site and its buildings, it is reacting to the status quo rather than anticipating what the college wants to be and how it must change to get there. Rather, the master plan must anticipate the future by considering facility needs generated by the college’s mission statement, strategic plan, and corresponding academic program. The strategic plan is the critical step in establishing the framework for the master plan; if it is not in place already, it should be the first step in the master planning process.

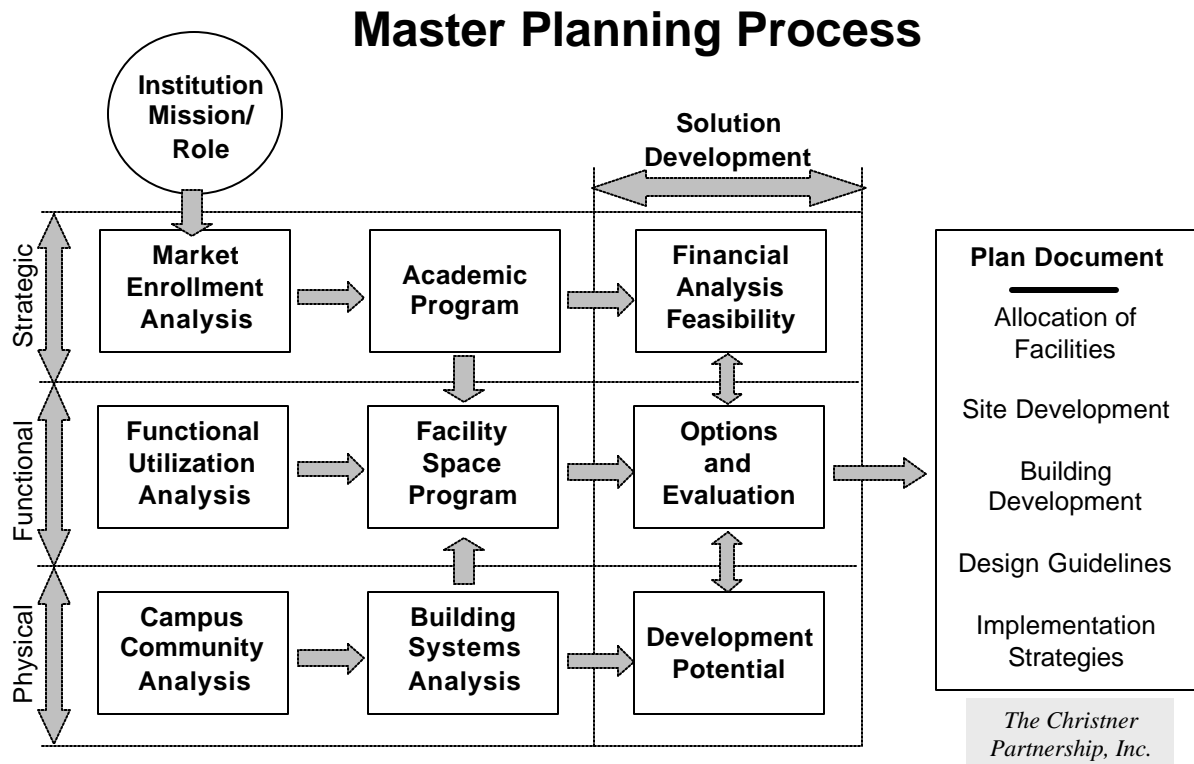


Figure 1

The institution mission/role and information and required data in the first two columns of the strategic and functional line in Figure 1 are collected and/or prepared by the university. The data is analyzed and subsequently organized into written documents. The information and required data in columns one and two of the line entitled “physical” are usually collected by the professional firm selected to facilitate the process and prepare the solution development and plan documents components for the plan.

With the columns one and two data gathered for each of the three components—strategic, functional, and physical—synthesis of the information can begin leading to the development of potential solutions in column three by the professional. The potential solutions can be evaluated and referred in an iterative process. For example, options may be tested against financial implications and the overall development picture. The plan, usually prepared by the professional, should show how the buildings are to be used, how the site should be developed, the design guidelines for future facilities, and the timing and cost implications for each planning period.

### Planning Participants

Development of the facilities master plan requires participation from all sectors of the university staff, students, faculty, and council of trustees. The assignments of individuals to specific positions will vary

from university to university. In order to develop an effective plan, a cadre of the top leadership must serve on all of the component groups as shown in Figure 2. Cohesion of the participating committees through joint participation by the university leadership on the various committees is essential to develop a meaningful plan.

The Association of Higher Education Facilities Officers (APPA) recommends use of four committees with participation as shown below.

## University Master Planning

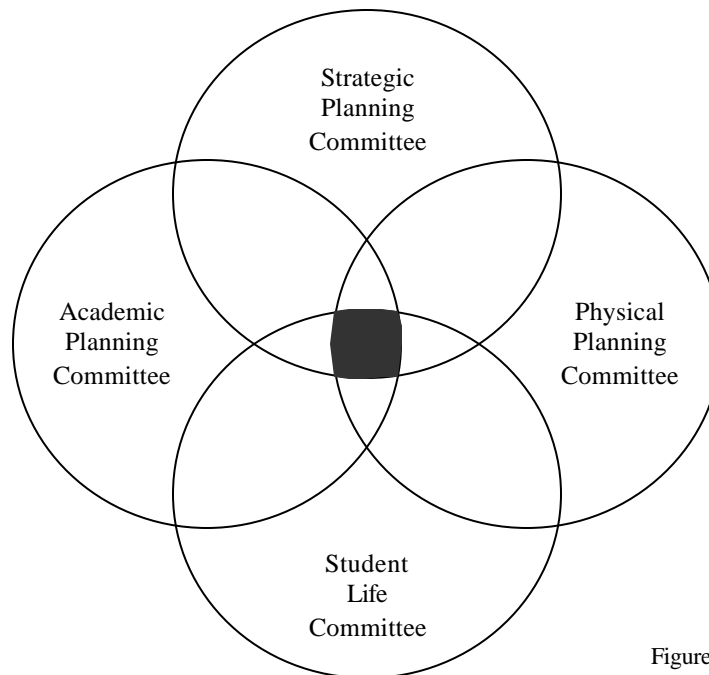


Figure 2

### ***The Strategic Planning Committee***

The strategic planning committee should be charged to develop the university's mission statement, and the goals and objectives for accomplishing the mission. Committee members should include council of trustees representatives, senior administrative officers, the chair of the academic planning committee, chair of committee on student life, the chairman of the faculty senate, leaders of student government organizations, and chair of the physical planning committee.

### ***Academic Planning Committee***

The academic planning committee should be responsible for determining present and future requirements for the educational programs to be conducted at the university. Preparation of market studies to indicate growth potential and non-growth areas for individual academic disciplines should be prepared under the committee's direction. Studies dealing with special instructional strengths or thrusts, library development, quality of programs, special policy matters, realistic enrollment projections by academic discipline, and other issues influencing or affecting the educational process should also be prepared under their tutelage. The committee should be chaired by the vice president or head of academic affairs. Committee members should include academic deans, faculty, and student leadership.

### ***Committee on Student Life***

The committee on student life should be responsible for developing an inventory and assessment of student facilities relative to student study, social, recreational, athletic, and health-related needs. The chair of the committee should be the vice president or dean of student life. Committee members should include student body leadership, faculty representatives, and a senior campus administrative officer.

### ***Physical Planning Committee***

The physical planning committee should be tasked with preparation of the master plan, as well as with the planning and programming of capital facilities, and maintenance and repair projects to support the educational and student life programs. The chair of the committee should be the vice president for finance and administration or business affairs. Committee members should include the director of facilities and appointed students, faculty, and staff.

## **University Master Planning Product**

The resulting document produced from the facilities master planning process should include the following written plans and summaries.

- A site development plan addressing land utilization, a site master plan for locating future buildings, an acquisition plan for future real estate acquisitions, and a landscape master plan for the campus.
- A building development plan (capital facilities program) that identifies the renovations and new construction projects and the schematic/concepts of the building interiors required to implement the plan during the first five-year period.
- The design guidelines for construction or renovation of facilities for the campus, which include the concepts for planning and programming campus facilities, architectural considerations and vocabulary for guiding design of future projects for the main campus and branch campuses, the landscape concepts to be used, and the utility systems and infrastructure concepts to be incorporated into future projects to produce coordinated development of campuses.
- The implementation strategies for effecting the plan, including capital project programming requirements within the short-, mid-, and long-term time frames with project cost estimates and phasing schedules, as required.

The plan should be recorded electronically compatible with CADD for ease in updating and revising as changes occur.

## **Master Plan Review and Endorsement**

### ***Background***

Board of Governors' Policy 1995-01 stipulated that each System University will complete a Facilities Master Plan prior to April 2000. BOG Policy 2000-02 subsequently repealed BOG Policy 1995-01. BOG Policy 2000-02 requires that the Facilities Master Plan be continuously maintained as a "planning document that specifies the facilities and their existing or planned locations required to conduct the mission of each State System university based upon the academic, financial, and strategic priorities of the university, as endorsed by the State System." Volume VI-C of the System's Facilities Manual addresses the requirement and the contents for System facilities master plans. This section addresses the process for review and approval of facilities master plans.

**Review and Approval Process**

The assumptions used in, and the summary of the results of the preparation of the basic planning data (Volume VI-C, page 1) shall be submitted for Office of the Chancellor review and concurrence prior to the start of the physical analysis and solution development phase (Volume VI-C, page 4) of the process. An outline guide for the submission is shown in figure 1. A summary paragraph should be included under each area outlined in figure 1.

After receipt of Office of the Chancellor concurrence, the physical analysis and solution development phase may proceed. The Office of the Chancellor shall be invited to participate in the scheduled reviews of the physical and development phases, and shall receive a detailed briefing of the concepts used in the draft plan before it is finalized for presentation to the Board of Governors.

After review and concurrence of the plan concepts by the Office of the Chancellor, the plan concepts will be presented to the Capital Facilities Committee of the Board of Governors for information and agreement.

**State System of Higher Education  
Facilities Master Plan  
Basic Planning Data Outline—Executive Summary**

\_\_\_\_\_ University of Pennsylvania Date: \_\_\_\_\_

Strategic Review Findings	Financial Capabilities
Functional Analysis Findings	Enrollment
Technology Impact	Academic Quality
Organizational Review Findings	Academic Program
	Concepts Guiding the Plan Development

Figure 3

**Annual Update Review**

An annual update to each university’s master plan will be submitted with the university’s capital appropriation budget request. The update should address the changes made to the items in Figure 3 and the resulting impact on capital project planning and programming. The Office of the Chancellor will review the update and comment on issues when not in concurrence with the changes.