



Integrated Project Delivery + OSHPD/FDD PPR = A Formula for Success

Phased Plan Review



PHASED PLAN REVIEW

HSSA §129765. Documents to accompany applications for approval; phased submittal and approval of plans; fee

(a) Except as set forth in subdivision (b), the application for approval of the plans shall be accompanied by the plans, including by full, complete, and accurate specifications, and structural design computations, which shall comply with the requirements prescribed by the office. The office may permit electronic submission of plans.

(b) notwithstanding subdivision (a), the office, in its sole direction, may enter into a written agreement with the hospital governing authority for the phased submittal and approval of plans. The office shall charge a fee for the review and approval of plans submitted pursuant to this subdivision. This fee shall be based on the estimated cost, but shall not exceed the actual cost, of the entire phased review and approval process for those plans. This fee shall be deducted from the application fee pursuant to Section 129785.

Phased Plan Review (PPR) is the process that engages the Office of Statewide Health Planning and Development, Facilities Development Division (FDD), at its sole discretion, early in the project design, continuing through the development and submission of documents during the conceptualization, criteria design, detailed design, implementation documents, agency review, construction and closeout phases. Within each phase, milestone(s) will be established at which point(s) specific, agreed upon segments and/or elements of the design and/or building systems are completely designed and/or are defined in their entirety. FDD will provide an agreed upon level of review allowing for written conditional acceptance of these elements and/or systems. For example, a floor plan that is not complete may still be reviewed for proper occupancy separations.

PPR may be applied to a standard (non-incremented) project or to an incremental project. In concept PPR lends itself to projects employing numerous forms of highly collaborative project delivery methods. However, PPR generally is not suitable for the traditional Design-Bid-Build project delivery approach. Also, PPR is not suitable for every size and type of project. Only H and I projects with an estimated construction cost of twenty million dollars (\$20 million) or more will be accepted for PPR. However, not all large projects are suitable candidates for PPR. Projects with significant uncertainties in program or budget are poor candidates, since significant changes in the project scope are likely, thus reducing the benefits of early review efforts.

The goals of phased review include facilitating the opportunity to design, review, approve and build a hospital project as efficiently and in as timely a manner as possible while achieving code compliance. Earlier involvement by FDD staff should result in eliminating major code deficiencies before they become embedded in the design, fewer back checks, shorter review times and an earlier approval and permit for the first increment of work. However, PPR is not a cure all for schedule crises, for a lack of planning or a lack of team collaboration. In fact, early, intense, thorough planning and collaboration is essential for PPR to be successful.

No application for PPR should be made to FDD until all active participants have a clear understanding and agreement as to their timing needs and performance expectations. Subsequent participants must have the same level of understanding and commitment as they join the team. FDD will consider a PPR successful if the agreed schedules have been met, if there has been minimal recheck, if any, of previously accepted items, no substantive changes or scope changes were made to the project, the number of change orders during construction are significantly reduced from the traditional project delivery approach (usually ranging from 300 to 600), the project was within budget and all team members worked together collaboratively throughout the duration of the project.

The term “Phase” as used in Phased Plan Review, refers to “Integrated Phases” that are a cycle of development in the conceptualization, design, approval and construction progression of project delivery as taken from the American Institute of Architects’ (AIA) “Integrated Project Delivery.” The seven integrated phases are Conceptualization, Criteria Design, Detailed Design, Implementation Documents, Agency Review/ Final Buyout, Construction and Closeout. These phases differ significantly in design and delivery approach from the traditional phases of Pre-design, Schematic Design, Design Development, Construction Documents, Agency Permit/ Bidding, Construction and Closeout.

Plans are developed sequentially through phases and the timing of sustained and consistent reviews must be included in the overall project delivery schedule. Responsibilities and timing of deliverables, goals to be achieved during each phase, etc. will vary according to the needs and priorities of the specific project. The choice should not be rigidly bound to traditional project delivery methods, but should be flexibly adapted to the project. One of the major benefits of phased review should be the ability of the PPR process to expand and/or contract (flexibility) with the needs of the project and of all participants. However, it is critical that the project participants as applicable, including but not limited to the owner, design team, contractor and FDD agrees to a detailed matrix of elements, segments, issues and/or building systems that will be reviewed and accepted for each phase. The list must be well thought out with clear details as it will be the roadmap that defines which elements are reviewed for code conformance at which phase of submission. If planned out and executed well, it will allow the design team and FDD both to focus on clearly defined items and/or systems with minimal extraneous information. An agreement of what building code items/systems will be reviewed at each “Milestone” during each “Phase” must be reached at the inception of the PPR.

This agreement will be documented in a “PPR Matrix.” Two Phased Plan Review Matrix examples are provided in this document. Example “A” is for a less complex project requiring minimal phased reviews. Example “B” is for a more complex, incremented project. The two examples provided illustrate the flexibility of the PPR. The FDD Plan Review Reminder Lists, available on FDD’s website at <http://www.oshpd.ca.gov/FDD/Forms/index.html>, could be used as a guide by designating at which milestone or segment of each phase applicable elements of the list will be defined adequately for conditional acceptance.

The PPR Matrix is a tool to plan the entire review process. A Reverse Phase Schedule, beginning at occupancy and working backwards to conceptualization, assists in the development of the PPR Matrix to ensure that it meets the needs of the owner, designers, contractor and FDD. Tasks, milestones, design times, review times, comment response times, back check times, construction times as well as priority needed for acceptance of certain segments and/or elements are all considerations required for a well-thought out and achievable PPR Matrix. For the Reverse Phase Schedule to be a valuable planning tool, the time frames must be reasonable and achievable by all participants at all phases of the process.

The “Milestones” define the percentage of completeness for a phase, at which point a specific task is scheduled to be accomplished. At milestones, portions of the design documents must be substantially complete, with little or no probability of change and are submitted to FDD for review. The design documents must include enough information of the over-all project to make it possible to review and accept specified segments and/or elements of the building and/or building systems as they relate to the whole project. For all disciplines except structural, a maximum of three (3) milestones that are not 100% Implementation Documents (CD’s) should be planned for FDD review. Structural may have up to five (5) milestones.

A “Task” defines what is to be accomplished at the specified milestone. For example: FDD review – structural only. “Segments” define a specific part of the building or building system that is being submitted for review. If the segment is not 100% complete it must be further defined with elements. An “Element” details a specific part of the building or building system that is submitted for review that is completely designed and/or defined in its entirety, for example “Size and Location Only” would be an element of the segment “Footings.”

Projects may be submitted to FDD in parts of one building or “increments.” Incremental design, bidding and construction or “fast tracking” is a process by which construction of a building is commenced prior to completion of the plans and specifications for the total project. In other words, permits and commencement of construction of early increments will occur while other increments or portions of the work are still under design and/or review. The builder may still be coordinating work and the design team may still be resolving plan review comments while work is progressing at the project site. All of this requires a well coordinated and balanced effort by all teams, including the FDD field team.

Each incremental project consists of a master project and any number of increments. An Incremental project must be identified at the time of plan review application and the application must identify the scope of each increment. Incremented projects are limited to one building; separate buildings may not be designated as an increment. A separate incremental plan review application must be submitted with each increment. Each increment must include a Testing, Inspection and Observation Program. Incremented projects may have separate designers and contractor of record for each increment.

To assure appropriate levels of review by all disciplines prior to issuing incremental permits, initial submittals for incremented projects in the PPR process should be submitted under the master number and packaged as one progress set for all disciplines to review. After reviews have progressed to an appropriate level, the implementation (or construction) documents for each incremental package will be submitted under the applicable increment for review, approval, and permit issuance. This is different than fast tracking in that it will reduce the risk of having significant issues affecting an approved increment discovered in subsequent reviews after construction has begun.

For PPR, an Increment represents a 100% complete set of documents for a part of the building and/or building systems that include previously accepted segments and/or elements ready for construction. Increments should be broken into parts according to appropriate construction phases, for examples Foundation, Frame, Tenant Improvements, etc. The PPR Matrix and PPR Schedule must be based on the review, approval and permitting of increments in a manner that ensures the review, approval and permitting of subsequent increments will not result in construction delays.

FDD and the design team must agree upon a realistic timetable or “PPR Schedule” for the submission and review of each milestone and coordinate the PPR Schedule provided in the PPR Matrix with the desired permitting and construction schedule. It is critical that the schedule be adhered to as FDD must plan for staffing. A delay in the design schedule may not result in a linear delay in the review process; the delay may be exponential depending on the workload and staffing availability at the time.

Acceptances of segments or elements are given “conditionally” during all phases leading up to the final approval of implementation documents. This means that acceptance of a design segment and/or element of the building or building system is binding as long as no changes are made to that segment or element. During the PPR, FDD will be reviewing specific completed segments and/or elements on sheets that are not yet complete. After these segments and/or elements are accepted by FDD, they must not be changed although the design process continues with more drawings being developed and additional information being added to specific drawings that FDD has already reviewed. In other words, for PPR to be efficient an essential concept is the agreement that conditionally accepted segments and elements of the design will not be altered. For example, if FDD reviews a floor plan in the first milestone submission for “Exiting” and accepts the design, then the “Exiting” is established and all subsequent information that is added to the floor plans in subsequent submissions can not alter the “Exiting” system. Although other information may be shown on the drawings, the review will be for the elements specified in the PPR Matrix only. For example, the “Exiting” review submittal drawings may also show doors and windows, however, because the review of door hardware, ratings, window sizes, etc. is not an element of the designated segment or milestone, the conditional approval does not apply to these elements. Any additional information will be reviewed as part of the segment or milestone where it has been identified as a segment of that review.

Any desired changes to items already reviewed and accepted by FDD must be called to the attention of FDD as this will be cause for re-review. Depending on the phase of design, changes do occur as a natural evolution of design and input from various sources, especially as subcontractors come on board and lend their specific expertise and knowledge or opinion. However, major changes must be avoided or minimized especially at certain milestones when conditional approvals are being sought. Significant changes to conditionally accepted segments and/or elements of the building or building systems may cause the PPR to be halted and require changing to the traditional plan review process. In this event, the construction documents would have to be 100% complete prior to proceeding with the review.

A serious code issue that could significantly affect the remainder of the plan review process and thus cause significant delays in the PPR Schedule will be identified as a "Deal Breaker." Deal breakers are determined by each individual FDD reviewer and discussed with the designer if and when they occur. A plan review comment designated as a deal breaker will be identified on the plan by the appropriate reviewer. Deal breakers must be resolved and conditionally accepted by FDD prior to progressing to the next milestone. Resolution may occur through phone calls, meetings, or e-mail and must be documented through drawing revisions. Revised sheets that include the deal breaker resolutions shall be submitted to FDD and will be attached to the originally reviewed set for that milestone. Comments made during a plan review that are minor in nature may be back checked during the next milestone review.

A Memorandum of Understanding (MOU) is a project agreement that defines the roles and accountability of the participants. The PPR Matrix and the PPR Schedule becomes the basis for the MOU. The MOU will also establish the fee payment schedule. The initial fee must include all costs that FDD anticipates will be incurred between the date of the MOU execution and the date that the first final review (100% Implementation Documents) of the first increment is submitted. It is expected that this fee will range from 10% to 35% of the total fee based on the estimated cost of construction. The MOU may be terminated because of major design or scoping changes to the project, non-compliance with the agreed schedule and inadequate responsiveness to comments. If the MOU is terminated, the project must be resubmitted using the traditional plan review approach. The Deputy Director or a Deputy Division Chief may terminate the MOU on behalf of FDD.

Collaborative Review/Over-the-Shoulder Review is a discretionary, continuing review process that consists of a series of Over-the-Counter in person review meetings. This process may be used during review of certain segments or elements of the PPR as necessary and occurs on a case-by-case basis at the request of the designer or the reviewer. This process may be particularly useful during the resolution of a Deal Breaker. The capability of FDD to accommodate this process will vary depending on workload and staff availability at the time. Submittal of details or drawings through e-mail, such as a PDF file or other acceptable electronic media, may be an alternative collaborative approach to resolving a plan check issue with a reviewer.

To achieve maximum efficiency and benefit from PPR, disputes must be resolved collaboratively and timely. All participants must agree to use the FDD Comment and Process Review (CPR) program effectively when issues are not resolved promptly. Delays caused by disputes may undo the efficiencies achieved by using PPR.

Value engineering usually results in ill-timed substantive changes in design, thus resulting in significant delays in project delivery. To avoid rework caused by value engineering and/or constructability issues, etc, the General Contractor (Builder) and major subcontractors, especially for MEP and structural work, must be involved in PPR at the most opportune time, this usually occurs during the Detailed Design Phase.

For PPR to be collaborative through all phases, the FDD Field staff assigned to the region where the project will be constructed must have input in the process at strategic intervals. At a minimum, it is recommended that field staff review the documents at the first final review of the construction/implementation documents.

Building Information Model (BIM) is a three dimensional representation of the physical components required to construct the building. At present BIM technology is not fully developed. Different and often incompatible products may be used by architects, engineers, estimators, project managers, fabricators, constructors, facilities managers and other industry sectors. It is recommended that BIM tools be used to model and simulate the project when possible. This will allow the design to be brought to a higher level of completion and coordination before the implementation phase.

Early identification of potential problems, Alternate Methods of Compliance (AMC) and/or Program Flexes is essential for successful PPR. The later in the process that these are identified, the more likely that rework will be required, thus contributing to a loss of effectiveness and efficiency.

PPR requires a greater commitment of time and effort during the early phases with the expectation this will result in reduced overall time and effort requires for project approval. For PPR to be successful, the owner must establish a point in time in the schedule in which user changes will no longer be allowed. The earlier in the process this occurs, the more effective and efficient the process will be. The following suggestions are offered to assist owners in giving early design approvals that will remain unchanged through the process:

- Designer to prepare “owner sign-off” floor plans that show footprints of all furniture and equipment that takes up either floor space or counter space. When approved, this plan will be the basis for proper placement of electrical and voice/data outlets, etc. In this manner the users will better understand the working spaces and clearances.
- Show scale and square footage on room types to ensure size conformity to the approved space program; this is particularly important for redundant spaces and specialized treatment rooms.
- Owner should have rooms that are repetitive mocked-up full size, such as patient rooms, etc. and reviewed by the appropriate user groups for functionality, etc.

- Conduct review sessions with all appropriate departments during all design phases. Waiting until hundreds of sheets are completed is too little involvement of the users and too late to reduce the potential for rework.
- Make sure that the rough-in requirements for owner furnished equipment is shown on the plans and that they are correct (have vendors review the plans).
- If the project will connect to an existing building have the architect/engineers review the existing building for tie-in locations and for other conditions that may need to be brought up to current code.
- Early in the design phase, ensure that the central plant has sufficient capacity, such as chilled water, steam, medical gases, emergency power, etc., phase to support the demands generated by the additional square footage. Modifications to the existing central plant or a new central plant may be needed.
- Send each department revised plans as changes occur during each design phase.

Senate Bill 1661 provides for a construction extension of up to two years provided certain criteria are met. If a large replacement project or major structural retrofit project has not already been submitted to FDD for review, it is improbable that the first criteria could be met without using PPR.

For a new or replacement building submitted as an incremental project, the following segments must be submitted to FDD on or before December 31, 2008 to be deemed ready for review:

Structural:

1. Detailed Approach to Design Analysis
 - Geotechnical Report
 - Detailed summary of proposed structural design approach and methodology
 - Progress set of structural drawings
 - Alternate method of Compliance (AMC) submittals, as applicable
 - Shoring Design Criteria submittal through an AMC, as applicable
2. Building Configuration and Loading Criteria
 - Detailed loading criteria including vibration criteria with detailed maps indicating location of each loading criteria
 - Progress set of structural drawings
- 3a. Lateral Design – Vertical Lateral System
 - Lateral design model
 - Calcs for establishing building mass and frame loading
 - Framing plans and frame elevations
- 3b. Gravity Design Model – Gravity Elements
 - Gravity design model
 - Calcs for gravity design

- Framing plans and frame elevations

All other disciplines, as applicable:

1. Building Analysis
 - Basis-of Design narrative summarizing the proposed building design approach and methodology, existing and new proposed utilities and connections (including capacities) to infra-structure
 - Progress set of architectural drawings
2. Site Plan Analysis
 - Location of building on site
 - Site utilities
 - Make ready work
- 3a. Floor Plan Analysis
 - Alternate Methods of Compliance and Program Flexes
 - Department layouts
 - Vertical transportation and stairs
 - Major mechanical and electrical spaces/rooms
 - Preliminary exiting analysis and assumptions
 - Locations of shafts
 - Progress set of architectural drawings
- 3b. Site Systems Analysis
 - Fire loop/main
 - Underground or aboveground fuel storage tanks
 - Bulk oxygen and medical gases
 - Routing of other major site utilities
 - Progress site plan and reference civil drawings

For a Structural Retrofit Project the following segments must be submitted to FDD on or before December 31, 2008 to be deemed ready for review:

Structural:

1. Detailed Approach to Design and Analysis
 - Geotechnical Report
 - Alternate Method of Compliance (AMC) submittals, as required
 - Identify areas that may require shoring and or underpinning
 - Material Testing Program
 - Detailed summary of proposed structural retrofit design/analysis approach and methodology including structural requirements of 2007 CBC chapter 34A, ASCE 41-06 and SB 1953 as required
 - Description of existing vertical lateral system along with code used in original construction

- Existing/As-built Structural Drawings, preferably OSHPD stamped and approved
 - Progress set of retrofit structural drawings showing plan layout of the vertical lateral system, vertical lateral frame or wall elevations
2. Building Configuration and Loading Criteria
 - Lateral and gravity loading criteria for the building
 - Updated set of retrofit structural drawings showing required information from Segment 1 along with gravity framing retrofit layout and retrofit foundation layout
 - 3a. Lateral Design – Retrofit Vertical Lateral System
 - Retrofit computer lateral design model as applicable
 - Calculations for establishing building mass and Vertical Lateral Frame loading taking into account existing and retrofit condition
 - Retrofit framing plans and Vertical Lateral Frame elevations
 - 3b. Gravity Design – Retrofit Gravity Elements
 - Retrofit computer gravity design model as applicable
 - Calculations for retrofit gravity design taking into account existing and retrofit conditions
 - Retrofit framing plans
 4. Retrofit Foundation Design
 - Identify foundation retrofit system as applicable
 - Retrofit foundation plans as applicable

All other disciplines, as applicable:

1. Phasing Plan
 - Identify any proposed major make ready work as applicable
 - Identify major conflicts, impacts, issues and areas affected that may require AB 2194 interim space Program Flex(es) and/or Alternate Methods of Compliance
 - Identify proposed safe/temporary exit routes as applicable
2. Final Configuration
 - Department layouts
 - Accessibility Compliance - identify major conflicts, impacts, issues and areas affected that may require an Unreasonable Hardship and/or Equivalent Facilitation Request

PPR is a work in progress and it is subject to change as determined appropriate by FDD management.

WHICH APPROACH IS BEST FOR MY PROJECT?

Use the table below to determine the possible benefits and limitations of each approach and the outcome that each may have on your project.

Traditional Plan Review

- Teams usually isolated from each other during much of the process
- Independent efforts by disciplines requires more coordination
- Substantive changes in design at later phases are possible although cost and budget will be affected
- Increased effort in final phases of project
- Linear, nose-to-tail, cyclical processes
- Unilateral effort and decision making
- Individually managed and pursued
- Hand off of responsibilities from one entity to another
- Rework of code related deficiencies late in the process is time consuming and costly
- May be accomplished with reduced staffing levels at earlier phases
- Many owners, designers and contractors are more familiar and comfortable with this approach
- Project design and budget have more flexibility for a longer duration
- Works well for straight forward or simple designs that are readily reviewable and/or approvable
- Works better for projects not significantly impacted by time constraints
- Works for all project delivery methods

Phased Plan Review

- Integrated team must be assembled early in the process
- Collaborative, open communication between all team members is essential for success
- Increased effort in planning during earlier phases of project
- Maintaining continuity of team is important
- Concurrent review on multiple levels requires increased staffing during earlier phases
- Early decision making, contribution of ideas and consensus on design solutions and issues is necessary
- Information must be shared openly
- Moves design decisions upstream as far as possible to where they are more effective and less costly thus reducing rework
- Substantive changes in design at later phases are should be avoided and may cause the project to revert to traditional review approach
- Consequence of changes negates benefits of PPR
- Earlier construction start than traditional approach with managed risk
- Not suitable for all project delivery methods

Application for Phased Review

A. Facility: _____

B. Project Title: _____

C. Kind of Project: New Building (N) Addition (A) Structural Retrofit (R)

D. Type of Facility: General Acute Care Skilled Nursing (SNF)
 Psychiatric Hospital

E. Estimated Construction Cost * _____

* Presubmittal Meeting (P.I.N. 37) Required for Projects \geq \$20 million

F. Provide a Reverse Phase Schedule:

Milestone	Start Date	Completion Date
Occupancy		
Equipment Anchorage		
Tenant Improvements		
Structural Frame		
Foundation and Underground Utilities		
Order Steel		
Excavation and Mass Grading		
Contractor and Major Subs On Board		
Owner Signs-off Program – No Further Changes		
Geotech Report Submitted		
Entitlements Obtained		
Project Scope and Design Finalized		

G. Provide a Phased Review Matrix.

H. Provide a narrative which includes the following information:

1. Project Scope.
2. Identify major participants and specify who will have overall project coordination responsibility and who will have project responsibility from each of the major entities, such as owner, designers, contractor, etc.
3. Contract/Project Delivery Model to be used.
4. Describe the manner in which the design team will involve owners in decision making and at what phases and/or milestones will binding sign-offs occur.
5. Describe how changes in scope, schedule or organization will be handled.
6. Describe the manner in which disputes will be resolved between disciplines, with FDD reviewers, etc.
7. In what manner will the owner verify that the budget for the project can meet future construction costs, fees, entitlements?
8. Describe the manner and at what intervals the contractor and/or major subcontractors will be involved in the process.
9. Describe the manner, if any, that major suppliers and/or vendors be involved in the process.
10. What items will require peer review, Program Flex or Alternate Method of Construction/Protection?
11. Describe the quality control program.
12. Identify any known significant project risks, such as geotechnical approval, entitlement approval from local jurisdiction, funding, etc. and the plan for mitigation of each.