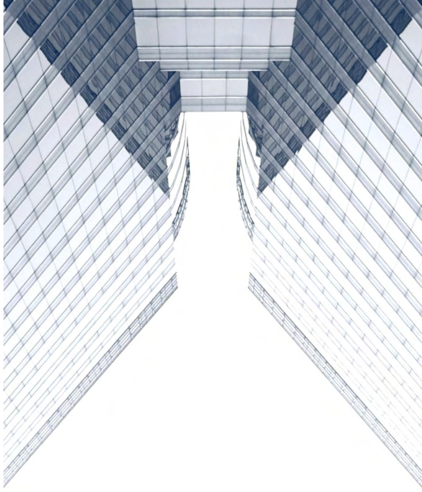
FACING TOMORROW'S INDUSTRY CHALLENGES TODAY

CURT/FMI 2012 Owner Survey

FMI

MANAGEMENT CONSULTING • INVESTMENT BANKING
for the ENGINEERING and CONSTRUCTION INDUSTRY



Knowledge • Expertise • Relationships

TABLE OF CONTENTS

INTRODUCTION

The election year has brought much attention to what has happened over the last four. Candidates have committed significant time and money assigning blame for the pain of those years and the lack of progress toward a robust economic recovery. The jobless rate remains too high, the housing market depressed and economic growth too slow for many to embrace the notion that a recovery has happened at all. Campaign rhetoric aside, the nation's economy has only slowly recovered from the losses of the Great Recession with too much ground left to cover to claim victory. The recovery from the recovery has yet to begin for many, especially in the engineering and construction industry.

At its peak in 2006, the construction industry represented more than one trillion dollars of economic activity, roughly 9 percent of nominal gross domestic product (GDP). The industry has contracted every year since then. The burst of the housing bubble, the credit crisis and the ensuing recession reduced the industry to roughly 70 percent of its 2006 size in 2012 and to only 5 percent of nominal GDP.

Such a significant decline to the industry and the broader economy has stolen headlines for the past four years and created a unique set of challenges for capital program owners as well as their design and construction partners. The dark cloud, however, is clearing. According to FMI forecasts, construction put-in-place volumes in 2012 are expected to end the year 5 percent higher than in 2011. While recovery still faces tremendous headwinds, pockets of prosperity do exist.

Understandably, capital program owners are concerned with the impacts that today's constrained project funding and high unemployment have on their capital programs. They have not forgotten, however, that even during the boom years, the industry faced significant challenges. They have also not lost sight of the reality that once the lingering effects of today's sluggish economy – and the challenges it creates – finally become memories, the industry will still face significant challenges.

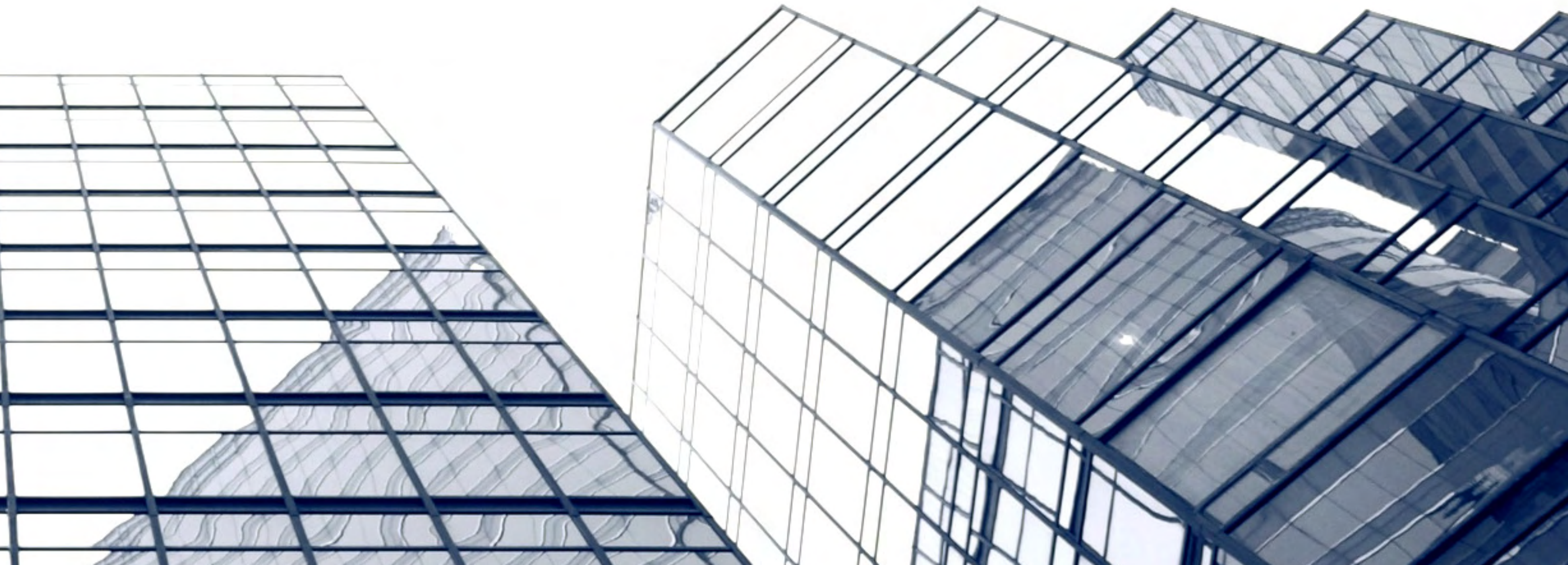
The dark cloud, however, is clearing. According to FMI forecasts, construction put-in-place volumes in 2012 are expected to end the year 5 percent higher than in 2011. While recovery still faces tremendous headwinds, pockets of prosperity do exist.

What can be done about the shrinking skilled labor pool, especially as construction volumes increase? When will achieving greater collaboration across the capital program value chain become more than aspiration and talk? Even more importantly, how will we achieve it? Through the 2012 Owner Study, FMI and the Construction Users Roundtable set out to understand how large capital program owners are coping with the current environment, as well as, what challenges they believe the future environment holds and how prepared they feel to face these challenges. In general, survey and interview questions fell into these broad areas:

- Identification of future issues impacting capital programs and the degree of preparedness toward addressing those issues.
- Level of staffing changes during the past four years and anticipated staffing trends going forward.
- Degree of project disruptions affecting capital programs resulting from delays, cancellations and funding challenges.
- Continued evolution of project delivery systems and procurement methods.

Based on survey responses, it is clear that many capital program owners have already begun the process of identifying future challenges and mitigating the impact of those issues on their capital programs. Other owners, however, anticipate many of these challenges to have a significant effect on their capital programs and are not confident in their responses to date. The ability of these owners to maintain the objectives of their capital programs in the face of these challenges will depend on the actions they take to identify and address these issues.

How capital program owners respond to both the current and future environment will significantly influence their ability to plan, design, procure and manage capital projects effectively. As their ability to engage in these activities changes, so too will the expectations of owners for their planning, design and construction partners.



Key Findings

Significant concerns remain unresolved in the minds of many owners. While some owners feel adequately prepared for the challenges that lie ahead, many are not confident in their ability to address tomorrow's industry challenges.

- Seventy-two percent of those worried about the impact of limited project funding are not confident in their response.
- More than half of those worried about the impact of limited internal staffing and skilled labor are not confident in their responses to these issues.
- While only 20 percent of respondents are worried about the availability of qualified planning, design and construction partners, nearly 90 percent of those respondents are not confident in how they are responding to the issue.

The sluggish state of the economy and its related impacts are still the top of mind concern among owners. While owners are concerned about long-term industry issues, the most commonly cited concerns are direct results of the current economic environment.

- Availability of project funding is the top concern for owners with 50 percent of responses anticipating the issue to have a moderate to high impact on their capital programs.
- More than one-third of respondents believe regulatory compliance and permitting will have a significant impact on their capital programs.
- High unemployment has not led to an abundance of top talent for owners as the availability of both internal staffing and skilled labor are expected to adversely affect capital programs.

Internal staffing trends reveal two distinct approaches to how owners staff their capital programs. Respondents made significant staffing changes over the past four years. While many reduced their internal staff, as expected during a time of high unemployment, an equal number significantly increased staff.

- Two clear trends have emerged in how owners approach staffing their capital programs. Between 2008 and 2010, nearly half of respondents decreased while another half increased internal staff.
- During that time, nearly a quarter cut staff by more than 10 percent while another quarter increased staff by 10 percent
- Between 2010 and 2012, two-thirds of respondents continued their internal staffing trend from 2008 to 2010. Those who cut previously continued to cut while those who grew continued to grow.

Project disruptions, in the form of delays, cancellations and funding challenges, are having a significant impact on owners' capital programs three years after the recession is over.

- Project delays are affecting 83 percent of respondents while cancellations are affecting 41 percent.
- The most commonly cited reason for delays is changes in project scope with 58 percent of those experiencing delays citing it as a reason.
- Of those experiencing delays, 11 percent are experiencing delays on more than a quarter of their projects.
- Nearly all respondents, 93 percent, report regular use of self-funding projects.

Facing Tommorow's Industry Challenges Today

Despite the lingering effects of the economic turmoil during the past four years, capital program owners have not lost sight of the significant long-run issues the industry faces. Respondents answered a series of questions designed to assess what issues they felt would most significantly affect their capital programs and how confident they felt in addressing these problems.

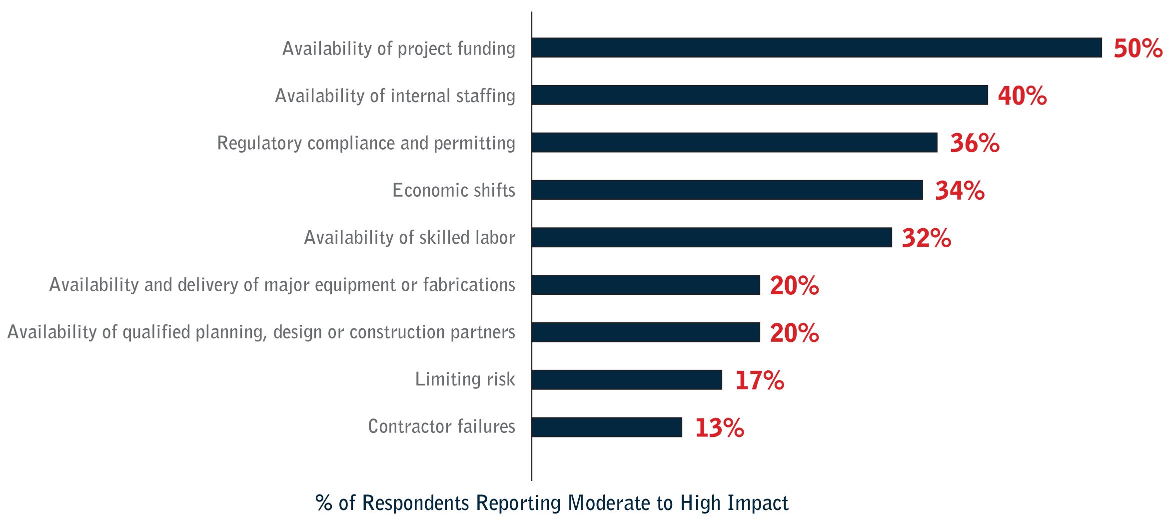
Responses to these questions reveal that while many owners feel adequately prepared to execute their capital programs over the next three to five years, others are not confident that they have taken the necessary steps to cope with what lies ahead.

Tomorrow's Industry Challenges

To assess which issues owners felt would most significantly affect their capital programs in the future, FMI asked respondents to rate the anticipated impact of several issues on a scale of 1 to 5 with 1 representing limited impact and 5 representing significant impact. Exhibit 1 displays the percentage of respondents who rated each issue as either a 4 or 5. It comes as no surprise that project funding was the most often cited issue with 50 percent of respondents expecting project funding to have an impact on their capital programs. The top-five issues stand out above the rest with each viewed as an impactful issue by at least one-third of respondents.

Despite high unemployment in the construction industry, the availability of internal staff and skilled labor are both significant concerns for capital program owners. The reduction in most capital programs has made these concerns manageable over the past four years. As economic conditions slowly improve, however, limited staffing and skilled labor will challenge the ability of owners to respond effectively to growing capital programs.

Exhibit 1: How significant do you expect the impact of the following issues to be on your capital program?



Confidence in Addressing These Challenges

To assess how confident owners felt about their ability to address these issues, FMI asked respondents to rate their confidence on a scale of 1 to 5 with one representing low confidence and 5 representing high confidence. Exhibit 2 displays the percentage of respondents who rated their confidence as either a 1 or 2 by issue. The results show that owners are not fully confident that their current responses will resolve all of tomorrow's challenges.

Exhibit 2: How confident are you that these steps will significantly resolve these issues?

Owners have the least confidence in their responses to economic shifts, funding, availability of qualified partners, compliance and permitting, and availability of internal staff. More than one-third of respondents have low confidence in their response to these challenges. Respondents are most confident in their response to contractor failures, with 55 percent reporting confidence in their response (Exhibit 2). Notably, however, owners viewed contractor failures as the least likely to have a significant impact with only 13 percent of respondents expecting it to adversely affect their capital programs in Exhibit 1.

Combining the responses to questions outlined in Exhibits 1 and 2 reveals that today's solutions are not enough for many of tomorrow's issues. Of those expecting the availability of project funding, internal staff, skilled labor and qualified design and construction partners to have an impact on their capital programs, more than half report low confidence in their current response (Exhibit 3).

Exhibit 3:

Issue	% Reporting Significant Impact	% of Those Reporting Low Confidence in Response
Availability of Project Funding	50%	72%
Availability of Internal Staff	40%	56%
Economic Shifts	34%	58%
Availability of Skilled Labor	32%	75%
Availability of Qualified Partners	20%	89%

Owners' Needs

Exhibit 4 outlines what needs owner respondents view as the most important to their capital program. Owners were asked to rank frequently cited "owner needs" in order of importance to their capital programs. The responses were averaged to calculated the rank of each need across all respondents.

Despite the disruption caused by the recession, owners' fundamental needs have remained largely unchanged. Respondents were asked to rank how important frequently cited "owners' needs" were to their capital program goals. The top "owner needs" remain safety, best value and price, schedule and quality. Long-term operational efficiency rounds out the top five needs.

Exhibit 4:

Rank the importance of frequently cited "owner needs" as they pertain to your capital program	Average Rank
Safety	1
Best value and low price	2
Schedule	3
High quality	4
Long-term operational efficiency	5
Improved productivity	6
Low price	7
Sustainability	8
Greater depth of expertise	9
Reduced conflicts resulting in lawsuits and delays	10
Single source	11

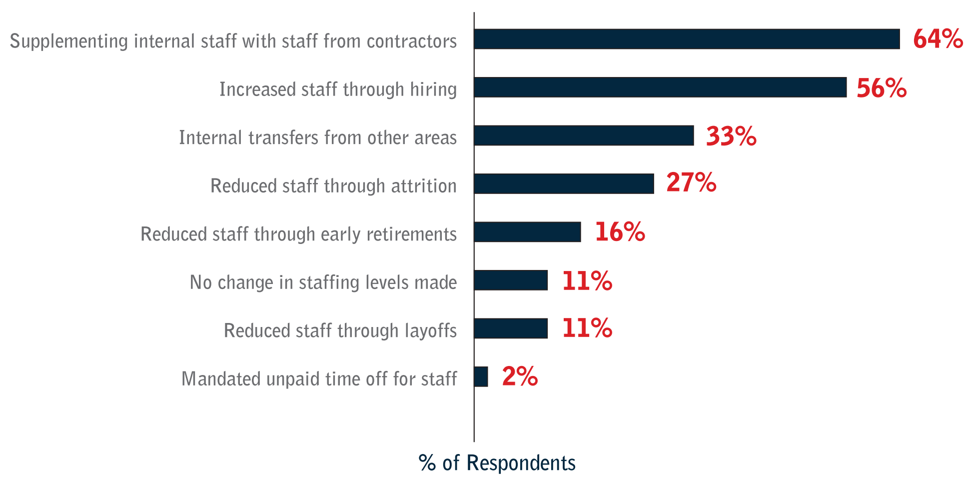
Owner Staffing Trends

The past four years have been a tumultuous time for capital program owners with regard to internal staffing. Responses to the 2012 Owner Study reveal that owners are making significant changes to their capital program staff. Interestingly, two approaches to staffing and outsourcing emerge from survey responses as some have significantly reduced staff while others have significantly grown internal staff.

Changes in Staffing Levels

Owners answered questions around what tactics they used to adjust internal staff in 2011 and 2012. As seen in Exhibit 5, only 11 percent of respondents did not make changes in staffing levels during the past two years. The most commonly used approaches to staffing changes are supplementing with staff from contractors, at 64 percent, and hiring staff, at 56 percent. For those reducing staff, the most commonly used tactic was to seek reduction through attrition, 27 percent of respondents. Other than attrition, owners also reduced staff through early retirements (16 percent) and layoffs (11 percent).

Exhibit 5: In the past two years (2011 and 2012), have you made adjustments in capital design or construction staffing through the following actions?



Staffing Disruption During the Recession And Recovery

The Great Recession sent shockwaves through the U.S. job market at the end of the last decade. Capital programs certainly felt the impact as respondents report significant staffing changes between 2008 and 2010. Only 3 percent of respondents did not report making changes during that time. More than half of respondents made dramatic shifts in staff. Not all of these changes, however, were bad for capital program staff. While 27 percent of respondents decreased staff by more than 10 percent, another 27 percent increased staff by the same amount. An additional 43 percent either increased or decreased staffing levels by less than 10 percent (Exhibit 6).

After such drastic changes from 2008 to 2010, program owners did not stop making major changes from 2010 to today. Only 5 percent of respondents reported making no changes. The trend this time was more toward growth with 61 percent of respondents increasing staff. Twenty-five percent increased staff by more than 10 percent. While only 33 percent of respondents decreased staff, nearly half of them decreased staff by more than 10 percent (Exhibit 7).

Exhibit 8 combines how respondents changed internal staffing levels in both periods, 2008 to 2010 and 2010 to today. When looking at the staffing trend over time, 66 percent of respondents followed the same trend during both periods with 41 percent increasing staff during both while 25 percent decreased staff during both. Another 20 percent decreased in immediate response to the recession but have since increased staff.

The emergence of both trends reveals two very different approaches to staffing capital programs that result from different answers to the question, "What is the right level of internal staffing versus outsourcing for capital program owners?"

Exhibit 6: What percentage change in your total planning, design or construction staff took place between January 1, 2008 and January 1, 2010?

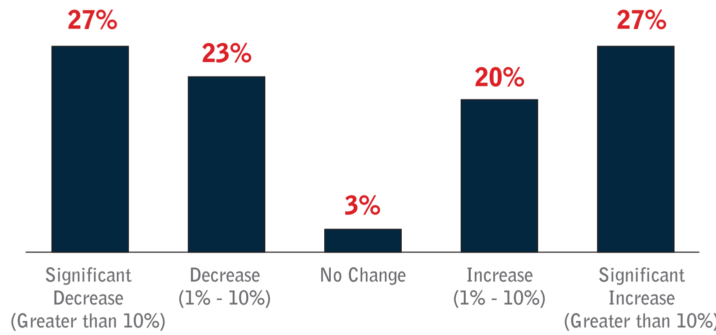


Exhibit 7: What percentage change in your total planning, design or construction staff took place between January 1, 2010 and today?

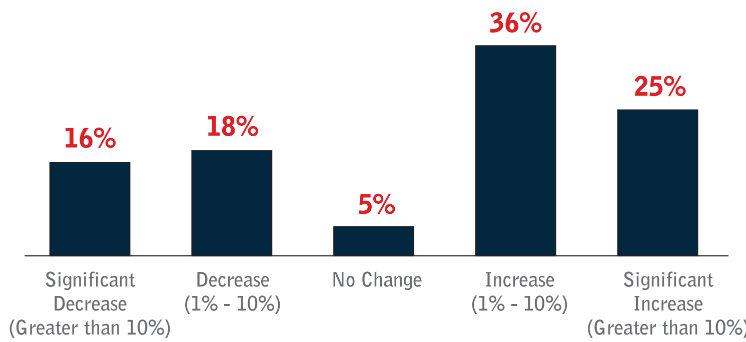


Exhibit 8:

Staffing Change 2010 - 2012

Staffing Change 2008 - 2010

	Increase	No Change	Decrease
Increase	41%		7%
No Change			2%
Decrease	20%	5%	25%

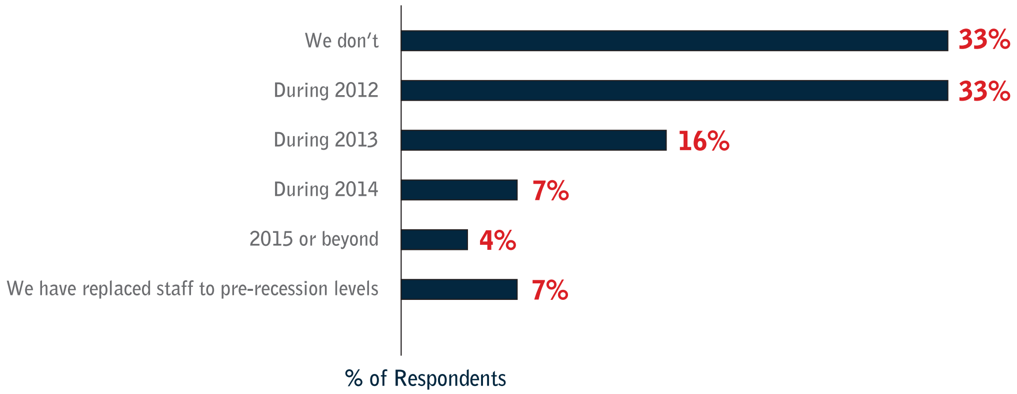
Capital program owners are not always in the business of planning, designing, construction, or operating and maintaining physical assets. Instead, they are in the business of generating electricity, selling products, providing education services and so on. As a result, many capital program owners are deciding that they are better served reducing staff internally and depending more on external firms to provide and maintain the physical assets they need.

The objectives of a third party, however, are not always in line with those of the capital program owner. Without sufficient oversight and internal capabilities, some owners worry about their ability to achieve the mission of their capital program when it is left largely in the hands of other firms. This concern only increases the more vital the physical asset in question is to the success of the overall business or organization.

Economic disruption over the past four years has intensified changes in staffing levels within capital programs. The "right" combination of internal staff versus outsourcing is unique to each capital program and project. Responses to the 2012 Owner Study reveal that the owner community as a whole is seeking the right combination in a variety of ways.

Given the significant disruption in staffing over the past four years, respondents were asked to forecast when they expected to begin hiring staff again, if at all. Thirty-three percent of respondents do not plan to hire internal staff in the near future. Another 33 percent are hiring in 2012, while 27 percent do not foresee hiring until 2013 or beyond. Only seven percent of respondents have replaced staff to pre-recession levels (Exhibit 9).

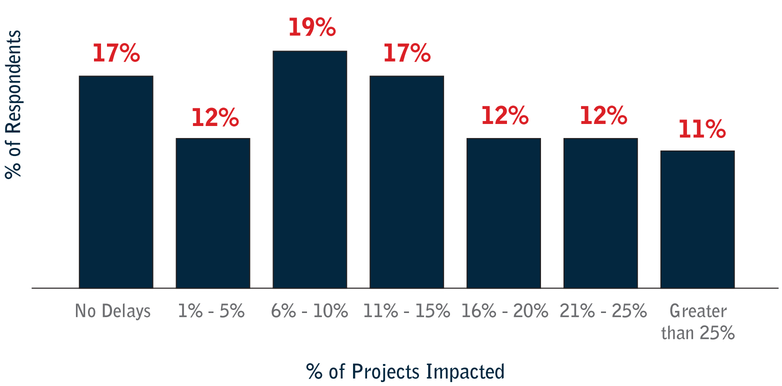
Exhibit 9: If applicable, when do you plan or forecast a need to begin hiring capital planning, design or construction staff?



Project Disruptions

Capital program disruptions have defined the past four years as delays, cancellations and tremendous funding challenges have caused many owners to reduce capital programs. Even private owners with access to capital are hesitant to commit that capital to projects because of the high levels of volatility and uncertainty. The political uncertainty and uncertainty in demand from end markets as consumers and businesses alike cut back to deleverage make the current environment a tremendously risky one in which to make bets through large capital investments. The return to growth has begun. Most capital programs, however, are not back to business as usual. The majority of respondents reported experiencing significant disruptions to their capital program in the form of project delays, project cancellations and funding challenges.

Exhibit 10: If you are experiencing project delays, what percentage of your projects would you estimate are affected?



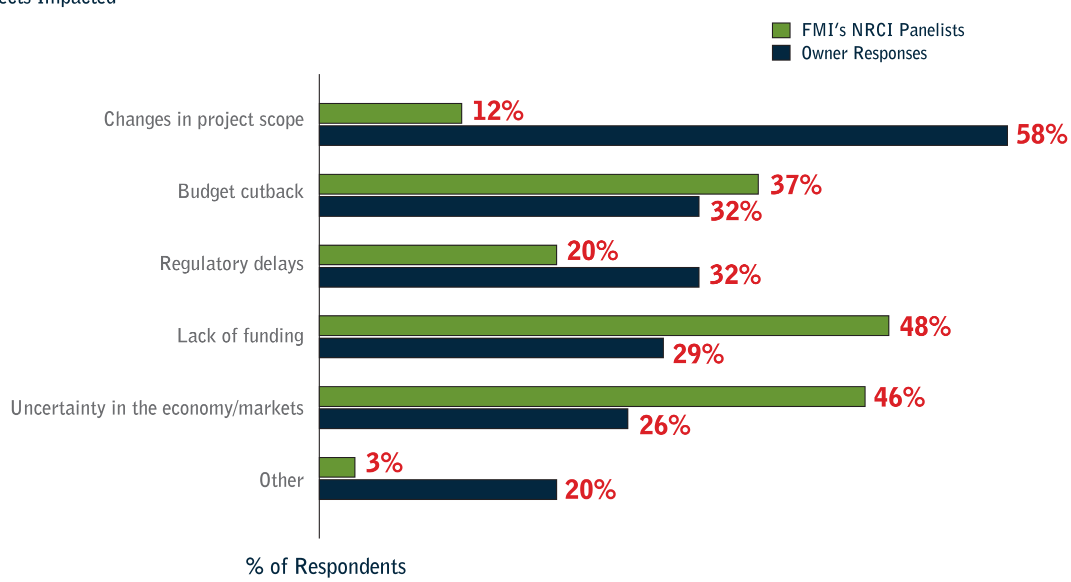
Project Delays

Owners were asked what percentage of their capital program was affected by project delays. Such delays threaten the ability of capital program owners to maintain the asset base vital to the success of their respective organizations. Exhibit 10 shows that the vast majority of respondents, 83 percent, are currently experiencing project delays. Of greater concern, 35 percent of respondents are experiencing delays on more than 15 percent of their capital projects, with 11 percent experiencing delays on greater than 25 percent of their capital programs.

Exhibit 11 compares responses to the 2012 Owner Study with those of FMI's Nonresidential Construction Index (NRCI) panelists regarding the main reasons for project delays. FMI's NRCI panel is a compilation of executives from a diverse sample of construction industry firms. Responses from each group reveal some significant differences as to why projects are delayed. The differences are partly attributable to the demographics of the two samples and the types of projects they are likely involved in; however, they also highlight differing perceptions between owners and their contracting partners.

The most common reason for project delays among owner respondents is changes in the scope of the project in at 58 percent of those experiencing delays. Surprisingly, market uncertainty was the least commonly selected reason for

Exhibit 11: What are the main reasons for project delays?



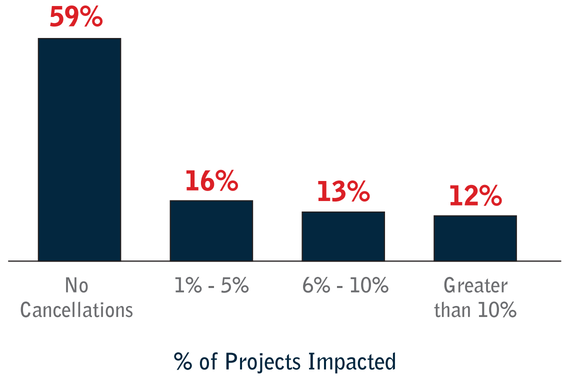
project delays among owners, although still viewed as a significant reason by 26 percent of those facing project delays. The remaining reasons provided in the question – budget cutback, regulatory delays and lack of funding – were each viewed as significant by roughly one-third of respondents (Exhibit 11). In addition to the reasons provided in the questions, survey respondents and interviewees also cited the lack of internal staff and skilled labor as a root cause for project delays.

When asked the same question, contractor panelists for FMI's Nonresidential Construction Index (NRCI) had a different view as to why projects were delayed. The most common reasons for project delays among NRCI panelists were lack of funding at 48 percent of responses and market uncertainty at 46 percent of responses. In fact, only 12 percent of NRCI panelists viewed changes in project scope as a main reason, even though it is the most commonly selected option among owner respondents (Exhibit 11).

Project Cancellations

While the vast majority of respondents are delaying projects, 41 percent are cancelling projects altogether. Exhibit 12 highlights the percentage of projects affected by cancellations, if any. While 59 percent are not experiencing cancellations, cancellations affect greater than 10 percent of capital program projects for 12 percent of owners. Some owners reported cancellations affecting as much as 20 percent of their projects.

Exhibit 12: If you are experiencing project cancellations, what percentage of your projects would you estimate are affected?

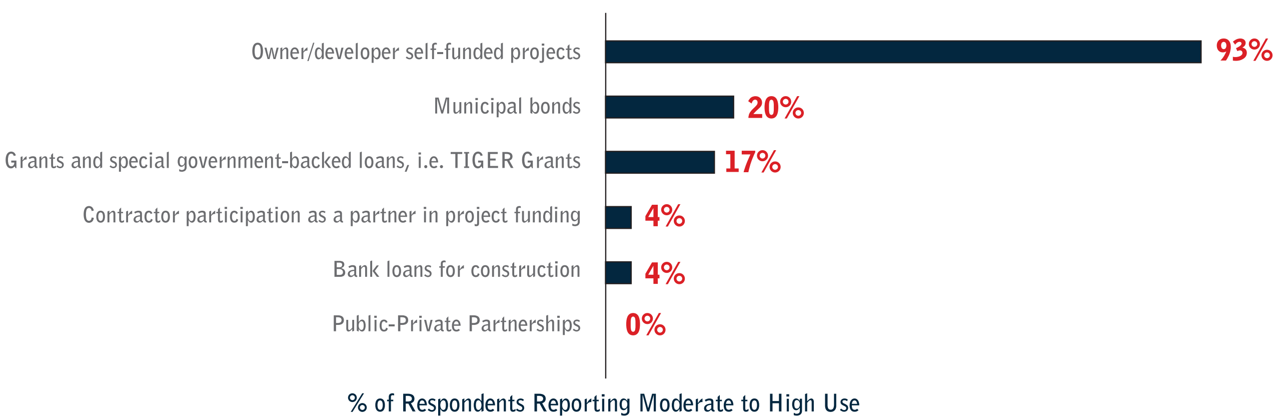


Project Funding

When asked to identify the most prevalent funding sources for design and construction, an overwhelming majority of respondents (93 percent) reported regularly self-funding projects (Exhibit 13). The second most common source of funding was municipal bonds with 20 percent of respondents.

Despite significant discussion around public-private partnerships as the answer for funding challenges, no owners reported using this approach to fund design and construction with great regularity. The low use of public-private partnerships among respondents is not as surprising given the demographics of the 2012 Owner Study, which contains more large private companies than public entities that are likely to pursue the use of P3s.

Exhibit 13: Rank the prevalence of the following funding sources for design and construction.

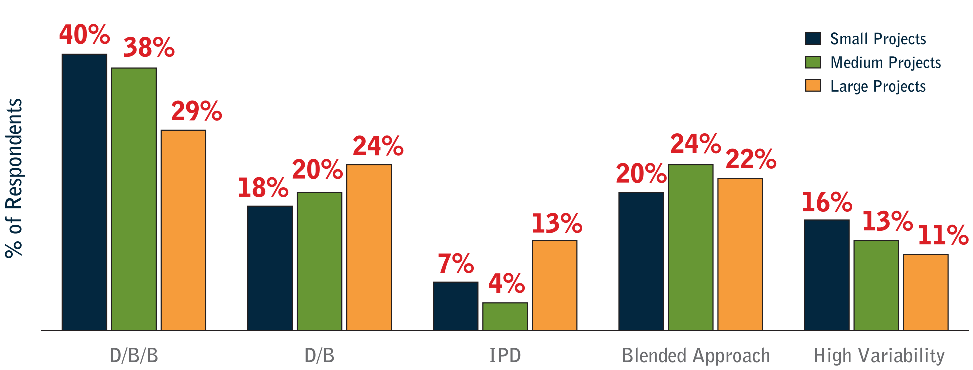


Project Delivery Systems

The poor economy slowed the long observed shift away from design-bid-build toward greater use of design-build. Many owners have maintained the use of design-bid-build in order to drive down contracting costs. To assess owners' perspectives on project delivery systems, survey participants responded to three questions:

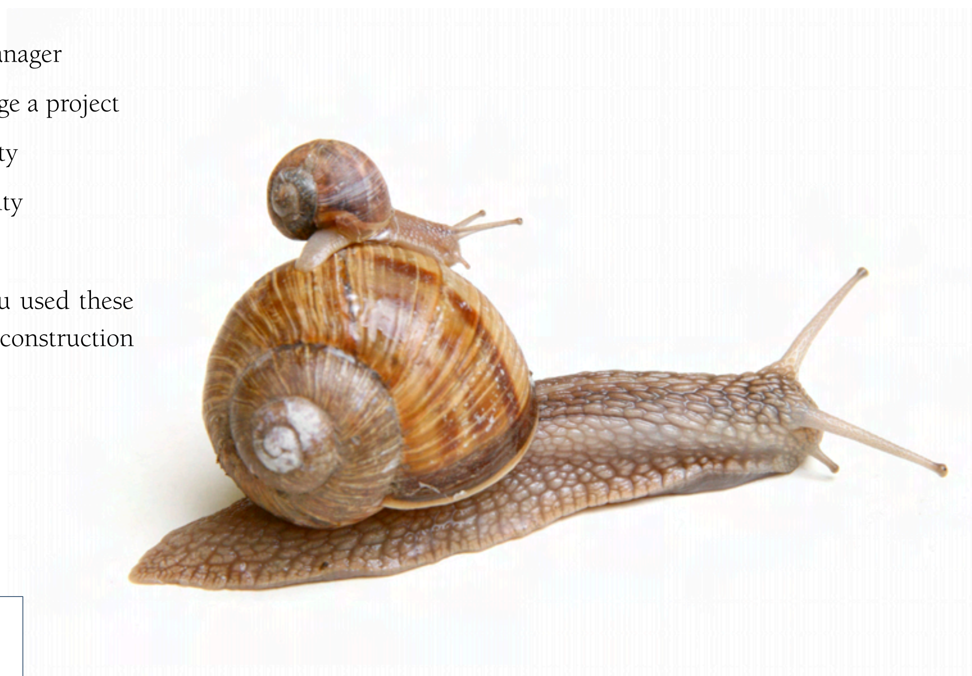
- On the majority of your capital construction projects during the last 12 months, use the scale provided to portray your approach to capital execution, including design/bid/build, design/build, IPD or a highly variable approach. Respondents answered this question differently for differing project sizes.
- Estimate the frequency with which you used the methods or services below to manage the process of construction on individual projects during the last 12 months:
  - Acting as your own construction manager
  - Hiring a general contractor to manage a project
  - Hiring a firm in a CM-at-risk capacity
  - Hiring a firm in a CM-agency capacity
  - Hiring a program manager
- Estimate the frequency with which you used these selection methods to procure capital construction services during the last 12 months:
  - Low Bid
  - Select Bid
  - Negotiated

Exhibit 14: Capital Project Delivery Method



Project Delivery Methods

Exhibit 14 presents responses regarding how owners prefer to deliver capital projects. Respondents selected their capital program's primary delivery method by size of project. Owners self-assessed value ranges for small, medium and large projects as project sizes vary significantly from one owner to the next. Traditional design/bid/build remains the most commonly selected delivery method for projects of all sizes. That said, as project size – and most likely complexity – increases, the use of other project delivery methods increases significantly.



Construction Management Processes

The majority of owners hire outside firms to provide service and support in the management of capital construction, 62 percent of projects and 66 percent of total spend compared to acting as their own construction manager 38 percent of projects and 34 percent of spend. Respondents report hiring a firm in a CM-at-risk or CM-agency capacity much less frequently than hiring a general contractor or acting as one. Respondents report hiring a firm in a CM-at-rick capacity on only 12 percent of both projects and spend while hiring a firm in a CM-agency capacity on only 3 percent of projects and 6 percent of spend (Exhibit 15).

Procurement Methods

Exhibit 16 details the most frequently implemented contracting approaches by both the number of projects and the percent of spend. Results indicate that owners procure nearly 80 percent of their capital programs using either low bid or select bid. The most predominant method depends on whether it is measured by project count or amount of spend. FMI believes that current economic drivers continue to support the use of low bid procurement for a number of owners.

Exhibit 15: Primary Construction Management Process

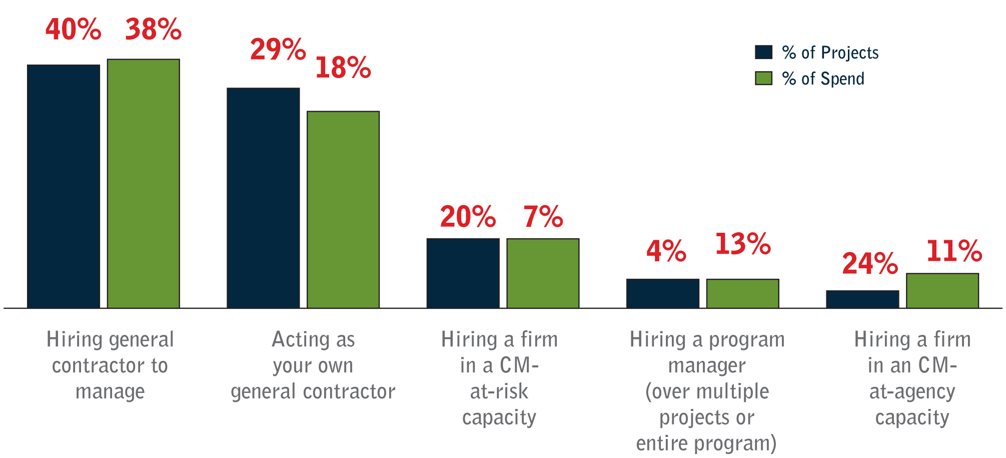
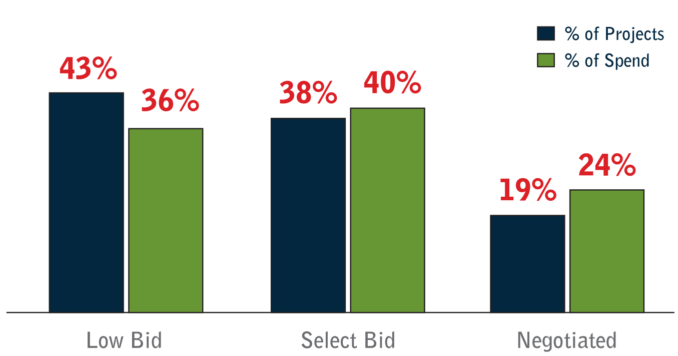


Exhibit 16: Primary Construction Procurement Method



Respondent Demographics

The 2012 Owner Study included 45 responses from a broad range of construction industry sectors, geographies and types of owner, each with unique capital program needs. Publicly traded stock corporations and private organizations represent 60 percent of respondents while government organizations at the federal, state and local levels make up 40 percent.

Industrial, energy and office were the most frequently cited types of construction by respondents with more than one-third of respondents reporting projects in each of these sectors. Roughly one-fifth of respondents also reported projects in water/wastewater, transportation and commercial types of construction.

In total, respondents represent more than $34 billion worth of capital spend in 2012. Respondents are making capital investments in every region of the globe with just more than 80 percent in the United States. The next largest region is Asia/Pacific at 7 percent of spend. Owners with capital programs larger than one billion dollars make up 27 percent of all responses.

Conclusion

The 2012 Owner Study highlights the challenges that capital program owners have faced over the past four years. With construction volumes on the rise in 2012 and the expectation for further growth in 2013, industry participants are cautiously optimistic that a more robust recovery is under way. As the industry shakes off the chains of the past four years since the recession began, however, growth alone will not solve all of the challenges the industry faces.

Many owners are not confident in their ability to respond to the challenges the industry faces. Respondents are concerned with their ability to overcome challenges in funding capital projects and expect this challenge to remain for years to come. Similarly, they are concerned about the limited availability of internal staff and shrinking pool of skilled labor.

The changing landscape of owner staffing has created a void for many capital programs while it has created a growth opportunity for others. During interviews, owners noted the movement of talent across the industry as certain construction markets rise and fall. As once-depressed markets begin to turn, it is likely that some of this shift will reverse. These dynamics have led to an influx of new ideas within capital programs fortunate enough to add talent with diverse backgrounds. On the other hand, they have caused a loss of specific experience and knowledge within other capital programs. Further challenging capital programs is the effect of project delays, cancellations and funding challenges. Although signs of optimism are evident, far too many respondents are still struggling with delays and cancellations to capital projects.
Resolving the industry's challenges of tomorrow is too great for the actions of a single firm to suffice. Associations such as the Construction Users Roundtable create the necessary forum for capital program owners to share experiences and find global solutions to industry-wide problems.

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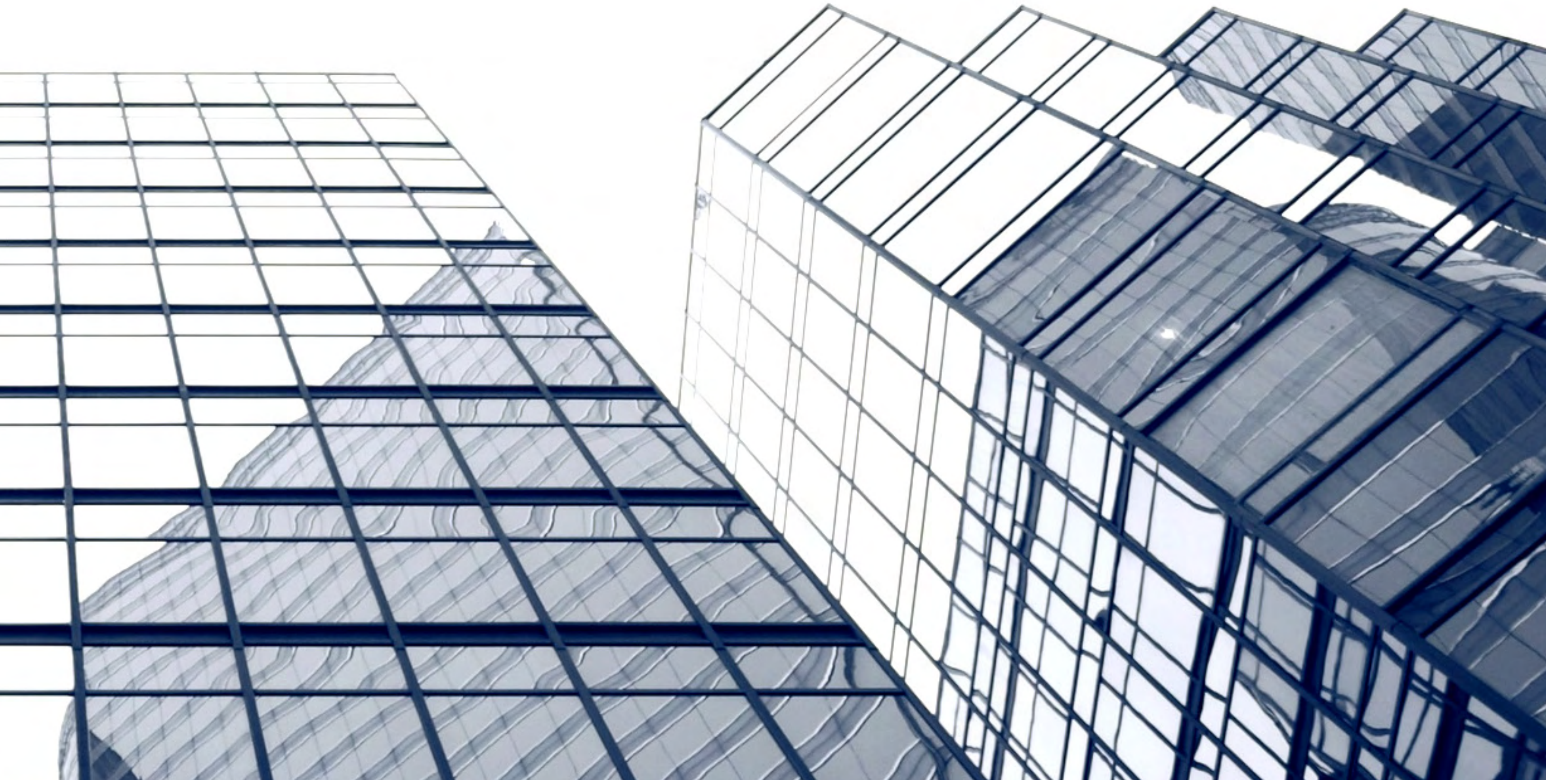

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