EXECUTIVE SUMMARY

2018 ANNUAL RESEARCH REPORT ON COLLABORATIVE-DELIVERY USE AND GROWTH IN THE WATER AND WASTEWATER SECTOR

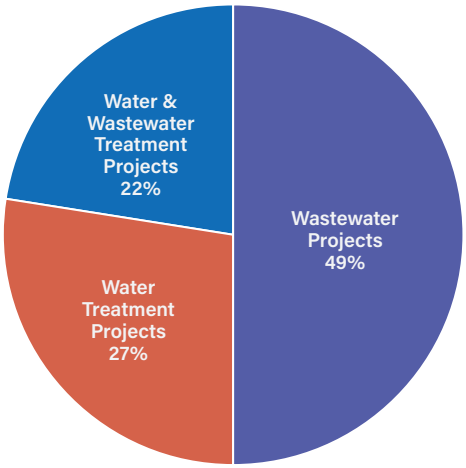
WATER DESIGN-BUILD COUNCIL

AN ASSOCIATION OF LEADING DESIGN-BUILDERS

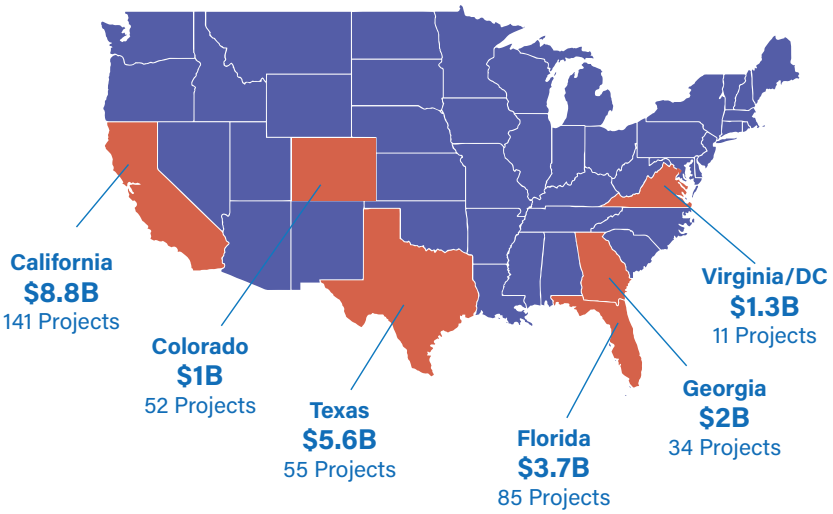
Trends and Growth in the Use of Collaborative-Delivery Methods

Between 2013 and 2017, WDBC's members participated in **650 collaborative-delivery projects worth an estimated $29.82 billion**. During that period, the use of collaborative-delivery methods—progressive design-build, fixed-price design-build, and construction management at-risk—for water and wastewater projects **grew steadily from $3.4 billion**, approximately 8% of the total market, **to about $5.29 billion, or nearly 12% of the total market**. This represents a compound annual **growth rate of 10.3%**, even while the overall market was flat.

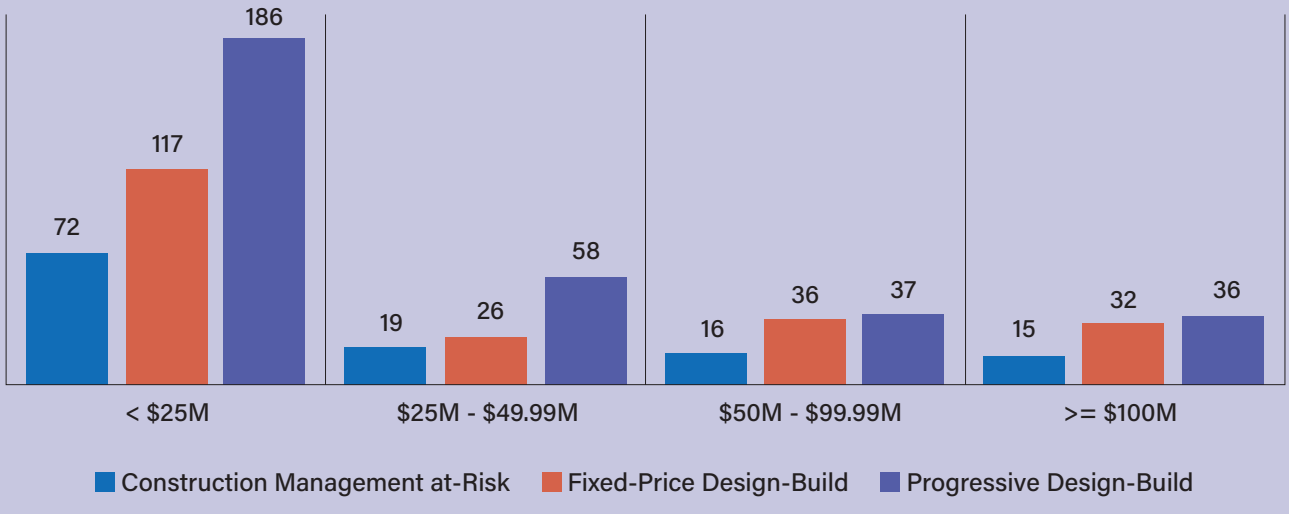
This growth is expected to continue to increase at an even faster pace at least through 2021, with a forecasted total market size of $6.1 billion in that year.



Wastewater projects dominate the market (2013–2017)



Six states lead in the design-build market, accounting for >75% of project volume



Size of projects delivered by owners (2013–2017)

What Drives Owners to Use Collaborative-Delivery Methods

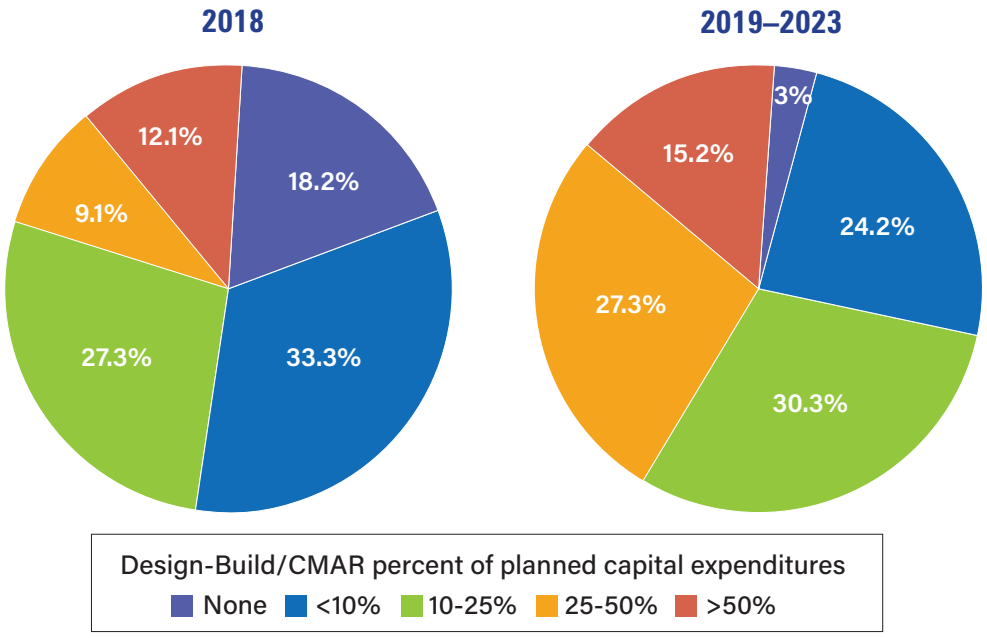
Extensive interviews of leading owners identified the core drivers influencing their use of collaborative-delivery methods

- More control of project design and implementation
- Better management of project risk
- Faster project delivery times
- Regulatory requirements
- Integration of design, construction, and operations
- Interest of design-build teams
- Clearer lines of responsibility
- Increasingly complex technical solutions
- Similar successful projects
- Anticipated cost savings

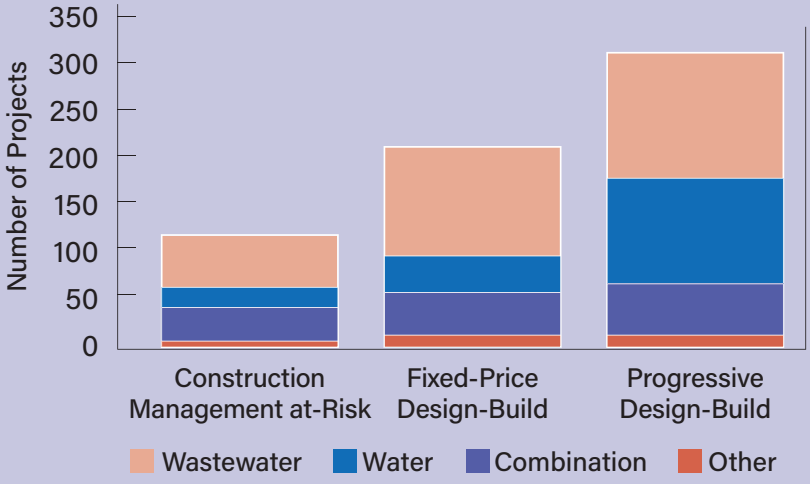
Future Trends in Collaborative-Delivery Methods

Research Question:
What percentage of the total capital expenditure will be spent on collaborative-delivery methods, such as fixed-price design-build, progressive design-build, or construction management at-risk?

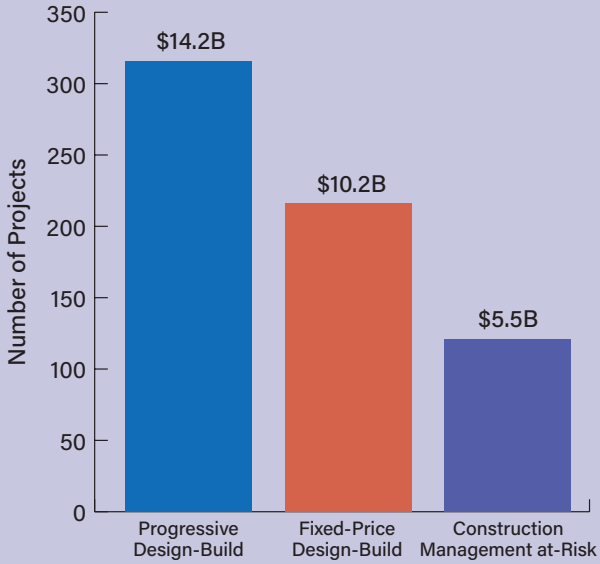
Percentage of Owners Reporting Increased Use of Collaborative Delivery



Trends in Types of Collaborative-Delivery Methods

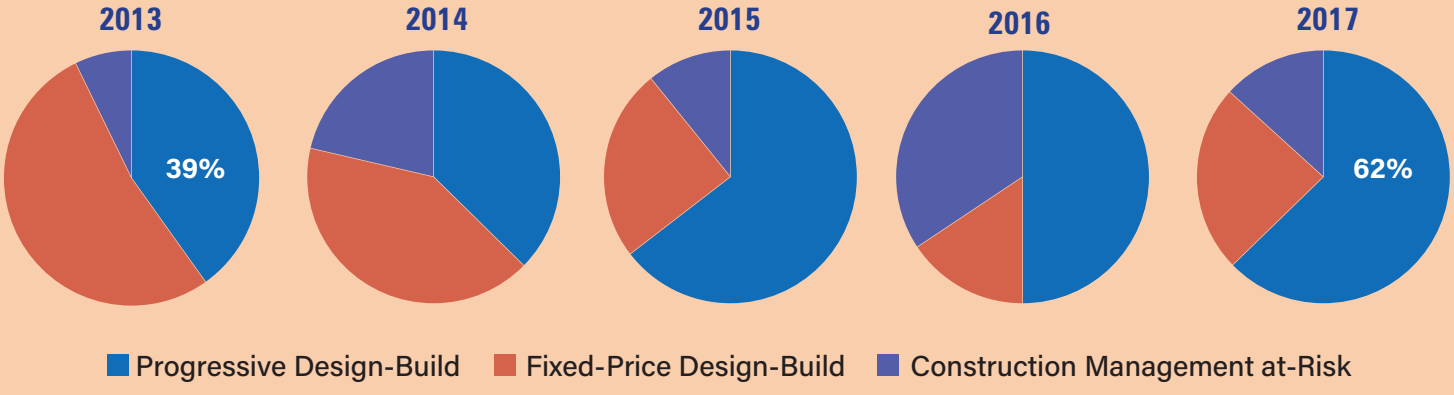


Number of projects delivered by owners (2013–2017)



Value of projects delivered by owners (2013–2017)

Owners Report a Rapidly Growing Preference for Progressive Design-Build



Primary reasons owners report their preference for progressive design-build delivery:

1. More influence over equipment selection, which in turn helps ensure that the utility can continue known O&M practices and meet forecasted O&M budgets
2. Increased participation in early-stage design innovation, logistics and construction decisions, and interface with other utility initiatives
3. Overall more participation, which leads to a higher likelihood of delivering a competitively procured, higher-quality project

Answering the Research Questions

The results of the annual research studies conducted for the WDBC highlight the significant increased use of collaborative-delivery methods by owners in the water/wastewater industry and growing trend to continue to do so. The answers to the 2018 research questions give compelling insights into this trend.

What are the number of projects, total project value, and market share for the collaborative-delivery methods?

The compiled project data through 2018 show that progressive design-build delivery emerged as the leading collaborative method during 2015 and continues as the preferred approach in the U.S. water and wastewater sector to date.

While owners seemed to prefer progressive design-build delivery over fixed-price for wastewater projects, they used both fixed-price and progressive design-build about evenly when developing new water supply and treatment projects. The value of the projects was not a determining factor in selecting the preferred delivery method, but rather which one could most effectively achieve the owner's project objectives.

Is it reasonable to forecast these same trends for the future?

In 2013, 8% of the total market for water and wastewater projects (worth over $3.4 billion) used some form of collaborative-delivery method. In 2017, this same market segment showed a 12% increase in growth of the use of collaborative-delivery methods (worth nearly $5.29 billion). So the short answer is, yes, if this trend continues to increase at this rate, then it may be reasonable to expect an annual conservative rate of growth in the use of collaborative-delivery methods, which means collaborative-delivery projects could play a dominant role in the marketplace by 2025.

What are the decision-making drivers for collaborative-delivery methods?

The drivers behind the use of collaborative-delivery methods are clear. Owners state that the decision to use collaborative-delivery methods is influenced by the ability to have a more efficient integration of technical input among key stakeholders during the design process, which then results in a more transparent project cost. They further cited that they like being able to be engaged during the design process, which enables them to make better decisions on how to allocate and manage risk more appropriately. Budget limitations, regulatory complexities, new technology, and the ability to achieve integrated project solutions are key considerations by owners that influence decisions to use collaborative-delivery methods.

Lastly, as new financing mechanisms become available that allow for hybrid delivery approaches, the use of collaborative-delivery methods continues to increase. As evidenced in the research findings in 2017 and 2018, the use of collaborative-delivery methods for water and wastewater infrastructure will not only continue to increase, but will likely become a dominant preference of owners.

RESEARCH METHODOLOGY — WDBC's 2018 research examined specific trends in the use of three types of collaborative-delivery methods (fixed-price design-build, progressive design-build, and construction management at-risk) through three tasks. The first updated the 2017 project database with current data by surveying 18 WDBC members, whom we estimate participate in about 75% to 80% of the dollar value of the total market. The second task involved in-depth interviews of owners that either considered or pursued collaborative-delivery methods for water and/or wastewater projects in 2017 and 2018 to better understand how and why they made such decisions and whether the process of collaborative delivery was successful. The third task consisted of an online survey of owners, practitioners, water/wastewater technology suppliers, and others (mostly educators and regulators), asking many of the same questions from the in-depth interviews of owners, such as procurement trends within their organizations and the market as a whole; trends in the three forms of collaborative-delivery methods used; drivers underlying decisions for procurement; types of projects for which each collaborative method is best suited; and the future use for each.

RESEARCH FINDINGS — The results of the Council's market research confirm that collaborative delivery is widely accepted and used by the nation's public utilities for a variety of water/wastewater treatment and related infrastructure projects. Moreover, the findings confirm that a clear increase in popularity exists for design-build in this market space. In keeping with its education and research mission, the Council intends to regularly update this market research.

ACKNOWLEDGEMENTS — The Water Design-Build Council expresses its sincere appreciation to Dr. Kenneth Rubin and Amit Dalal (Rubin Mallows Worldwide) for their thorough and insightful research. This work continues to guide the development of new research, industry best practices, and most importantly, the educational needs of all industry members. Special thanks to Dr. Edward Wetzel, PE, at-large board member (retired), and chair of the Research Committee that guided this work.

WATER DESIGN-BUILD COUNCIL
AN ASSOCIATION OF LEADING DESIGN-BUILDERS

The Water Design-Build Council's mission is advancing design-build delivery methods to transform the water industry—through collaborative thought leadership and education, supported by research.

WDBC MEMBERS

WDBC is currently comprised of 17 regular member firms. Regular membership in the Council consists of any private sector legal entity of whatever form, including affiliates and subsidiaries, who: (1) are frequently and regularly engaged in providing design-build and other forms of collaborative delivery in the water industry as a prime contractor (including joint venture partner or member of a special purpose corporation) accepting performance guarantee risks; and (2) have in-depth, in-house comprehensive professional engineering capabilities or self-perform construction capabilities. Regular members must have appropriate licenses or authority to perform its work as recognized by the appropriate governmental body in which the organization conducts its business to design and build public or private (including investor-owned, rate-regulated utilities) water or wastewater systems or facilities in North America. Regular members directly engage in contracting for design-build and other forms of collaborative delivery, as opposed to providing ancillary activities, such as serving as a consultant to owners on technical, institutional, legal, procurement, commercial, or other collaborative-delivery project related issues.

AECOM
HASKELL
ARCADIS Design & Consultancy for natural and built assets
HDR
BLACK & VEATCH
JACOBS
Brown AND Caldwell
Kiewit
BURNS McDONNELL
OBG Part of Ramboll
carollo Engineers...Working Wonders With Water™
PARSONS
CDM Smith
Stantec
Garney CONSTRUCTION ADVANCING WATER
TESCO CONTROLS, INC.
WALSH

WDBC ADVISORS

WDBC advisor members are an affiliated category of firms working with, and providing services to, engineering and construction firms in the water design-build industry. Candidates for this group include legal, insurance and finance firms, equipment suppliers, consultants, contractors, vendors, trade associations, and academic institutions. WDBC created this membership category to provide opportunities for service providers engaged in the water industry to collaborate with other member firms and gain further recognition of their services in design-build and other forms of collaborative delivery.

acciona Agua
FLATIRON
AECON
GOODWIN BROTHERS CONSTRUCTION CO.
Alberici
McCARTHY
50th Anniversary AQUA-AEROBIC SYSTEMS, INC. A Metawater Company 1969 – 2019
Austin Industries
PCL CONSTRUCTION
Balfour Beatty
plw waterworks
CLARK WATER
CORE & MAIN
Reynolds Construction
CROSSLAND HEAVY CONTRACTORS
RICE LAKE CONSTRUCTION GROUP
enerfab EXCELLENCE THROUGH EXECUTION
ULLIMAN SCHUTTE
evoqua WATER TECHNOLOGIES
WEBCOR
FERGUSON WATERWORKS
xylem Let's Solve Water

WATER DESIGN-BUILD COUNCIL
PO Box 1924, Edgewater, MD 21037 | 410.798.0842 | www.WaterDesignBuild.com