

# Public University Use of Social Infrastructure Public–Private Partnerships (P3s): An Exploratory Examination

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## Abstract

Using data from the 50 states, this exploratory study looks at public university use of public–private partnerships (P3s) for a particular type of social infrastructure, *student housing*. The relation between state social infrastructure P3s enabling legislation and public university P3 student housing project closures is analyzed. A deep dive is conducted into the legislative requirements of four states (California, Florida, Georgia, and Virginia) that have *specific* enabling legislation governing public university use of P3s for social infrastructure. The study finds that public universities have a 20-year history of utilizing social infrastructure P3s for student housing. A relationship is found between state social infrastructure P3 enabling legislation and increased public university use of P3s for student housing. The study also finds that states with *specific* public university P3 social infrastructure enabling legislation place decidedly different requirements on their use.

## Keywords

social infrastructure, university facilities, public–private partnerships, P3s, PPP, student housing

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## Introduction

Public infrastructure is frequently divided into three categories: transportation (e.g., roads, bridges, transit), environmental (e.g., water, waste-water, landfills), and social. Social infrastructure, also called “vertical infrastructure,” refers broadly to facilities utilized for public purposes such as schools, housing, health care facilities, sport and recreation facilities, arts and cultural facilities (e.g., libraries, museums), and other general government buildings (Martin, 2019a; Spacey, 2017). Most of the research literature on public–private partnerships (P3s) in the United States focuses on the transportation sector and to a lesser degree the environmental sector (Knopman et al., 2018). By comparison, the social infrastructure sector has received little research attention. This lack of research focus may explain why public university use of social infrastructure P3s has gone largely unnoticed (Blair & Williams, 2017; Cole, 2012).

Public universities have a 20-year history of using P3s for a specific type of social infrastructure: *student housing*. However, most of these social infrastructure projects were not called P3s. Instead, they were referred to as “privatization,” “outsourcing,” “non-recourse financing,” and “concessions” (Baum, 2016; *Chronicle of Higher Education*, 2019; EY-Parthenon, 2017). When these student housing projects are examined closely, it becomes apparent that they are P3s. The various terms used in the past to describe these student housing projects reminds us that the more modern term “public–private partnership” is somewhat of a language game used to describe what in many instances are older established practices (Hodge & Greve, 2010).

Table 1 provides an analysis of public university use of social infrastructure P3s for student housing in the 50 states between the years 1995 and 2014. As Table 1 points out, during this time period public universities closed on some 332 P3s for student housing. To put this figure in perspective, only 177 transportation P3s projects closed over essentially the same time period (Albalate et al., 2019). Public university use of P3s for student housing has been uneven across the 50 states. During the study time period, a dozen states had no student housing P3 projects, while other states had substantial numbers: Georgia (60), Pennsylvania (28), Texas (28), and New York (22). Public universities in Georgia stand out as leaders in the use of social infrastructure P3s for student housing.

## State Social Infrastructure P3 Enabling Legislation and Public University Use of Social Infrastructure P3s for Student Housing

The need for a strong legal foundation to support P3s of any type (transportation, environment, or social) is generally acknowledged in the literature (e.g., Albalate et al., 2019; Hodge & Greve, 2016; Martin, 2017; World Bank, 2017). The argument is made that well-defined P3 legal frameworks protect the interests of governments and taxpayers and encourage private sector interest and investment (e.g., Martin, 2017). Some evidence, drawn from transportation P3s, supports this contention. For example, a 50-state study by Albalate et al. (2019) found that state P3 enabling legislation led to

**Table 1.** Public University Social Infrastructure P3s for Student Housing (1995–2014).

State	Number of public university social infrastructure P3s
Alabama	5
Alaska	0
Arizona	11
Arkansas	3
California	26
Colorado	5
Connecticut	1
Delaware	4
Florida	14
Georgia	60
Hawaii	1
Idaho	0
Illinois	8
Indiana	2
Iowa	1
Kansas	0
Kentucky	3
Louisiana	18
Maine	0
Maryland	15
Massachusetts	0
Michigan	1
Minnesota	1
Mississippi	2
Missouri	2
Montana	0
Nebraska	2
Nevada	0
New Hampshire	0
New Jersey	3
New Mexico	2
New York	22
North Carolina	13
North Dakota	0
Ohio	11
Oklahoma	13
Oregon	5
Pennsylvania	28
Rhode Island	0
South Carolina	6
South Dakota	0

*(continued)*

**Table 1. (continued)**

State	Number of public university social infrastructure P3s
Tennessee	1
Texas	28
Utah	0
Vermont	0
Virginia	7
Washington	2
West Virginia	2
Wisconsin	3
Wyoming	1
Total	332

**Table 2. Public University Social Infrastructure P3s for Student Housing (1995–2014) by Type of State Enabling Legislation.**

States by type of social infrastructure P3 enabling legislation	Number of P3 student housing project closures
No state social infrastructure P3 enabling legislation ( $n = 41$ )	176 (53.0%)
Generic state social infrastructure P3 enabling legislation ( $n = 5$ )	49 (14.8%)
Specific state social infrastructure P3 Enabling legislation ( $n = 4$ )	107 (32.2%)
Total ( $n = 50$ )	332 (100%)

more transportation P3s and more favorable state enabling legislation lead to even more P3s. Martin (2019b) found similar results in a 50-state study of P3 transportation enabling legislation and transportation P3 project closures.

A majority (37) of states have some type of P3 enabling legislation. However, in many instances, this enabling legislation applies only to the transportation sector. Only nine states have enabling legislation governing the use of social infrastructure P3s (National Conference of State Legislatures, 2017). Five states (Arkansas, Indiana, New Jersey, Oklahoma, and Texas) have what can be called *generic* P3 social infrastructure enabling legislation that applies to state departments and regional and local governments and includes public universities. Four states (California, Florida, Georgia, and Virginia) have what can be called *specific* social infrastructure P3 enabling legislation that applies to public universities. A question arises: does *general* or *specific* state social infrastructure P3 enabling legislation lead to more public university use of social infrastructure P3s for student housing? The data in Table 1 can be pressed into service to shed some initial light on this question.

Table 2 rearranges the data from Table 1 using three categories (a) *no* state social infrastructure P3 enabling legislation, (b) *generic* state social infrastructure P3 enabling legislation, and (c) *specific* state P3 enabling legislation. *If* a strong legal foundation is

**Table 3.** Mean Average Number of P3 Student Housing Projects (1995–2014) by Type of State Social Infrastructure P3 Enabling Legislation.

Type of state social infrastructure P3 enabling legislation	Mean average of P3 student housing project closures
No state social infrastructure P3 enabling legislation (176/41)	4.3
Generic state social infrastructure P3 enabling legislation (49/5)	9.8
Specific state social infrastructure P3 enabling legislation (107/4)	26.8
Specific state social Infrastructure P3 enabling legislation minus Georgia (47/3)	15.7

important to protect the interests of public universities and taxpayers while simultaneously encouraging private sector interest and investment, *then* one would expect to find more student housing projects in states with generic P3 enabling legislation than states with no P3 enabling legislation and more student housing projects in states with specific P3 enabling legislation than generic P3 enabling legislation.

As Table 2 illustrates, the majority (53%) of public university social infrastructure P3 student housing projects during the years 1995 to 2014 were in states with no social infrastructure P3 enabling legislation. This finding is at odds with the previously cited literature that found a positive relationship between state P3 enabling legislation and the numbers of state P3 transportation projects. Social infrastructure P3s are decidedly different than transportation P3s, so findings in one may not necessarily translate to another. To explore further this contradictory finding, the data in Table 2 were restructured to show the mean average number of P3 student housing projects for the three categories. When this is done (Table 3), a somewhat different picture emerges. The mean average number of P3 student housing projects in states ( $n = 41$ ) with *no* social infrastructure P3 enabling legislation is 4.3. For states ( $n = 5$ ) with *generic* social infrastructure P3 enabling legislation, the mean average number of projects is 9.8. For states ( $n = 4$ ) with *specific* social infrastructure P3 enabling legislation, the mean average number of projects is 26.8. The data in this third category are obviously skewed by the state of Georgia with its 60 projects. However, when Georgia is removed for the analysis, leaving just three states (California, Florida, and Virginia) with *specific* social infrastructure P3 enabling legislation, the mean average number of projects is still 15.7. Thus, there does appear to be an association between state social infrastructure P3 enabling legislation and public university use of social infrastructure P3s for student housing projects during the years 1995 to 2014.

Unfortunately, unresolvable temporal problems exist with the state social infrastructure P3 student housing project data in Tables 2 and 3. It is unclear when state social infrastructure P3 enabling legislation (both *generic* and *specific*) was first adopted. Current state social infrastructure P3 enabling legislation may in fact have superseded older enabling legislation that is no longer readily available to online data searches. Thus, while an association appears to exist, a determination can be made that

state social infrastructure P3 enabling legislation is temporally precedent to public university use of social infrastructure P3s for student housing. It may well be that public university use of P3s for student housing preceded adoption of state social infrastructure P3 enabling legislation. Public university use of social infrastructure P3s for student housing may have contributed to state interest and support for social infrastructure P3 enabling legislation. The explanation also makes some policy sense in that state legislatures developing generic and specific social infrastructure P3 enabling legislation might well have considered the experiences of their public universities. Separating out the causal relationship between state social infrastructure P3s enabling legislation and public university use of P3s for student housing will have to be left to subsequent research.

## **States With Specific Social Infrastructure P3 Enabling Legislation**

To further explore public university use of social infrastructure P3s, a deep dive was conducted into the four states (California, Florida, Georgia, and Virginia) with *specific* social infrastructure P3 enabling legislation. A review of this enabling legislation provides an opportunity to explore how these states conceptualize social infrastructure P3s and the requirements they place on their use by public universities. Table 4 looks at the social infrastructure P3 enabling legislation of the four states on several dimensions: authority, public purposes, authorized P3 types, land and facility ownership requirements, financing and funding, value for money (VfM) analysis, revenue sharing, contract terms, and procurement requirements.

### ***Authority***

California, Florida, and Georgia provide distinct authority for the use of social infrastructure P3s by their public universities. In Virginia, the authority for public university use of social infrastructure P3s is contained in broader state education enabling legislation.

### ***Public Purposes***

Georgia restricts public university use of social infrastructure P3s to student housing and related services (e.g., dining facilities and parking). Florida and Virginia authorize public university use of social infrastructure P3s for any public purpose. California's approach is similar to that of Florida and Virginia, but with the caveat that social infrastructure P3 projects must be auxiliary (revenue generating).

### ***P3 Types***

The taxonomy adopted by the National Institute of Governmental Purchasing (NIGP, 2016) and the International City/County Management Association (ICMA; Martin,

**Table 4. State Policies on Public University Use of Social Infrastructure P3s in California, Florida, Georgia, and Virginia.**

Dimension	California	Florida	Georgia	Virginia
Authority	University of California System	State University System of Florida	University of Georgia System	State Universities and Public Schools
Public purposes	Auxiliary (revenue generating) projects such as student housing, medical and research facilities, and other	Housing, transportation, health, food service, retail sales, hotels, convention centers, stadiums, and other	Student housing and related dining and parking	Educational facility and any project that meets a public purpose
Authorized PPP types	DB and DBF with optional O&M	DBF required with optional O&M	DBFOM only	Any combination of D-B-F-O-M
Land	Off-campus land not owned by a public university	Land owned or under the control of the state or a public university	Land owned by one of the nine state public universities	Not specified
Facility ownership	Private	State, university, or private	Private	Not specified
Financing	Public and/or private	Private	Private	Private
Funding	User fees	User fees or availability payments	User fees (revenue risk)	User fees or service payments
Value for money (VfM) analysis	Not determined	Cost–benefit analysis	Business plan with 5-year financing	Cost–benefit analysis
Revenue sharing	No	Yes	Yes	Not specified
Contract term	Not specified	Up to 40 years	65 years	Not specified
Procurement requirements	Must comply with public contract code	Invitation to negotiate (ITN) or other procurement process	Unsolicited proposals only, followed by RFP	Solicited or unsolicited proposals

Source. Treasury Institute for Higher Education (2017); Georgia General Assembly (2015); University of California Office of the President (2013); State University System of Florida (2015); Commonwealth of Virginia, Division of Legislative Services (2002); Commonwealth of Virginia (2005); Code of Virginia (2002). Note. PPP = public–private partnership; DB = design–build; DBF = design–build–finance; DBFOM = design–build–finance–operate–maintain; RFP = request for proposal; O&M: operation and maintenance.

**Table 5.** Taxonomy of P3 Types.

P3 type	Description
Design-Build (DB)	Design (D) and construction (B) are bundled into one procurement and contract
Design-Build-Finance (DBF)	Design (D) and construction (B) are bundled into one procurement and contract with financing (F) provided by the contractor
Design-Build-Maintain (DB)	Design (D), construction (B), and maintenance (M) are bundled into one procurement and contract
Design-Build-Finance-Maintain (DBFM)	Design (D), construction (B), and maintenance (M) are bundled into one procurement and contract with financing (F) provided by the contractor
Design-Build-Finance-Operate (DBFO)	Design (D) and construction (B) and operations (O) are bundled into one procurement and contract with financing provided by the contractor
Design-Build-Finance-Operate-Maintain (DBFOM)	Design (D) and construction (B), maintenance (M), and operations (O) are bundled into one procurement and contract with financing provided by the contractor. This P3 type is also called a <i>concession</i> .

Source. Adapted from National Institute of Governmental Purchasing (2016) and Martin (2017).

2017) is used to classify the P3 types that public universities are authorized to use for social infrastructure projects (Table 5).

To be considered a P3 using this taxonomy, a project must include, at a minimum, the components of design (D) and build (B). Additional components of finance (F), operations (O), and management (M) may be added. Georgia allows only the DBFOM P3 type. Virginia allows any combination of design-build-finance-operate-maintain. California and Florida appear to have policy preferences for DB and DBF but allow for O&M components.

### Land

California has an expressed preference for social infrastructure P3s that are sited *off-campus* on land not owned by a public university or the state university system. Florida and Georgia are just the reverse and require that the land on which a social infrastructure P3 is sited must be owned or under the control of a public university or the state government. Virginia appears to have no stated position on this issue.

### Facility Ownership

California and Georgia require that public university social infrastructure P3 facilities be owned by the private partner. Florida requires state or public university ownership of the facility or contractual language specifying that title to the facility will be transferred to the state or a public university at the expiration of the P3 contract. Virginia is again silent on the issue.



## *Financing*

Financing refers broadly to how the up-front costs of design, construction (build), operating, and maintenance are covered. Florida, Georgia, and Virginia require all financing to be private. California allows for private financing, public financing, or a combination. California policy stresses that the primary reason for authorizing public university use of social infrastructure P3s is not financing, but rather risk transfer and accelerated project delivery.

## *Funding*

Funding refers to how the design, build, financing, operations, and maintenance costs are to be covered. All four states allow user fees. Georgia's authorization for user fees includes the requirement that the private partner assumes all associated revenue risk. Florida also allows the use of availability payments. Virginia provides for the use of "service payments," a concept that is not defined.

## *VfM Analysis*

Florida and Virginia require some type of cost-benefit analysis. Georgia requires a business plan that includes a 5-year financing component. California's requirements could not be determined.

## *Revenue Sharing*

Florida and Georgia require revenue sharing between the public university and the private partner. California does not. Virginia is again silent on the issue.

## *Contract Terms*

Florida allows contract terms for up to 40 years. Georgia allows for contract terms up to 65 years. California and Virginia are silent on this issue.

## *Procurement Requirements*

California requires public university social infrastructure P3s to comply with the state's *Public Procurement Code*. Florida suggests the use of its "Invitation to Negotiate" (ITN) approach. Virginia specifies the use of the request for proposal (RFP) process. Georgia takes the unique position of allowing only unsolicited proposals. If an unsolicited proposal is considered, then a formal competitive procurement process is required.

The major conclusion to be drawn from this deep dive is that state enabling legislation governing public university use of social infrastructure P3s varies considerably between the four states. In California, Florida, and Virginia, state enabling legislation is more discretionary and appears designed to encourage public

universities to experiment with social infrastructure P3s for projects that include, but go beyond, student housing. State enabling legislation in Georgia is more restrictive and appears designed to constrain public university use of social infrastructure P3s to traditional student housing projects only. The Georgia requirement that a public university social infrastructure P3 can result only from submission of an “unsolicited proposal” is notable and may indicate that private sector interest and available financing is the primary consideration in moving forward with any P3 student housing project.

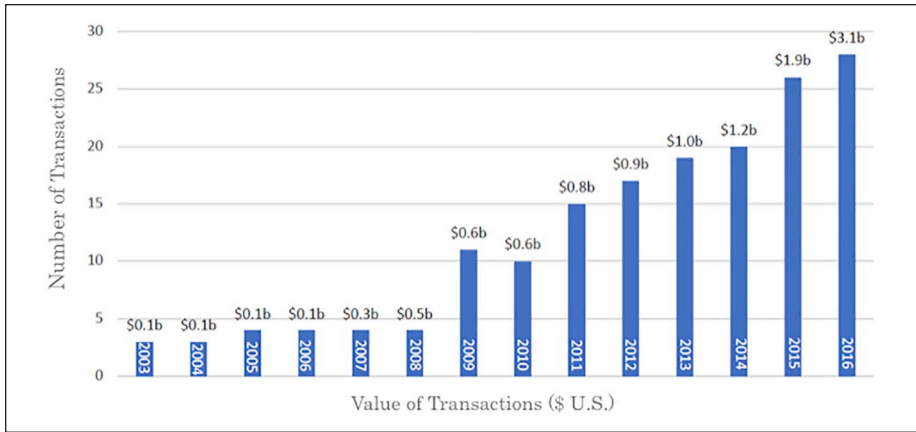
While state policies in California, Florida, and Virginia appear designed to encourage the use of social infrastructure P3s by their public universities, they diverge considerably on such issues as public purposes, the types of P3s authorized, land and land ownership requirements, financing and funding, revenue sharing, contract terms, and procurement requirements. The differing policy requirements suggest that the four states have different policy objective for how and when their public universities may use social infrastructure P3s.

## Discussion and Conclusion

This exploratory research study found that public universities have a two-decade history of utilizing P3s for a specific type of social infrastructure, *student housing*. Between the years 1995 and 2014, some 332 public university social infrastructure P3 student housing projects closed. Substantial variation was found to exist between the 50 states. Some public universities in some states made no use of social infrastructure P3s for student housing, while public universities in other states, such as Georgia (60), made extensive use. A relationship was found between *generic* and *specific* state public university social infrastructure P3 enabling legislation and the numbers of public university social infrastructure P3 projects closed between the years 1995 and 2016. This finding is in keeping with research in the transportation sector. However, it is unclear if state public university social infrastructure P3 enabling legislation lead to more public university use of P3s for student housing or if more public university use of social infrastructure P3s for student housing lead to adoption of state social infrastructure P3 enabling legislation. In either case, one would expect in the future to find more use of social infrastructure P3s taking place in states that have either generic or specific social infrastructure P3 enabling legislation as compared to states with none.

A deep dive into the four states with *specific* social infrastructure P3 enabling legislation found as many differences as similarities in the requirements placed on their public universities. This finding leads to the conclusion that the four states have different policy objectives for when and under what circumstances their public universities are permitted to use social infrastructure P3s.

Looking toward the future, public universities may be on the cusp of a dramatic move into the larger social infrastructure P3 space. As Figure 1 illustrates, the number and value of public university social infrastructure P3 transactions (student housing



**Figure 1.** Growth of P3s in higher education over time.  
Source. Adapted from EY-Parthenon (2017) and *Chronicle of Higher Education* (2019).

and nonstudent housing) remained relatively constant between the years 2003 and 2008 and then spiked dramatically.

The great recession of 2008, the “new normal” (Martin et al., 2012) that followed, and public university interest in private financing may account for this spike, but the introduction of state social infrastructure P3 enabling legislation cannot be ruled out as a contributing factor. The dramatic increase in public university use of social infrastructure P3s between 2011 and 2016 suggests that either a substantial increase in student housing P3s is taking place or public universities are branching out and using P3s to address other facility needs in addition to student housing.

Table 6, drawn from projects recently completed or currently under development in the four deep dive study states, indicates that student housing continues to be a priority, but that public universities in these states are also using social infrastructure P3s for other facility needs including classrooms, faculty offices, research facilities, and hotel and convention centers. For example, the University of California at Merced is nearly doubling its campus footprint with 15 buildings devoted to classrooms, labs, student housing, and retail space. At an estimate cost of US\$1.3 billion, the University of California Merced project is the largest social infrastructure P3 project even undertaken by an American university.

Finally, several issues raised in this article would benefit from additional research. For example, what is the legal authority for the use of social infrastructure P3s by public universities in states (e.g., Pennsylvania and New York) that have no generic or specific social infrastructure P3 enabling legislation? Is state generic and/or specific social infrastructure P3 enabling legislation the cause or the result of 20 years of public university use of social infrastructure P3s for student housing? What are the most common public university infrastructure needs being addressed with P3s today?

**Table 6.** Recent Public University Use of Social Infrastructure P3s.

P3 project name	Purpose	PPP type	Land	Facility ownership	Financing	Funding	Revenue sharing
Georgia P3 Housing Initiative	Student housing, dining, and parking	DBFM	Public	Private	Private	Student fees	Yes
Virginia Commonwealth University Gladding Residency Center	Student housing, university offices	DBFOM	Private	Private	Private	Student fees	No
George Mason University Long & Kimmy Nguyen Engineering Building	Classrooms, labs, and faculty offices	DB	Public	Public	Public	Public	No
University of California–San Francisco Sandler Neuroscience Center	Medical research centers, faculty offices, and classrooms	DBFOM	Public	Public	Private	Public	No
California State University–San Marcos Extended Learning Center	Classrooms and support	DBFOM	Private	Joint	Private	Public and private	Yes
University of California, Merced 2020 Campus Expansion	13 Buildings providing student housing, dining classrooms, labs, and retail space	DBFOM	Public	Public	Private	Public and private	No
Florida International University—Bayview Student Housing Complex	Student housing	DBFOM	Public	Private	Private	Private	No
University of South Florida—The Village	Mixed use: student housing and commercial space	DBFOM	Public	Private	Private	Private	No
University of Central Florida—Lake Nona Medical Center	Hospital and medical facilities	DBFM	Public	Public	Private	Private	Yes
University of Central Florida—Pegasus Hotel and Conference Center	Hotel and conference facilities	DBFOM	Public	Public	Private	Private	Yes

Source. Adapted from Levey et al. (2019).

Note. DBFM = Design-Build-Finance-Maintain; DBFOM = Design-Build-Finance-Operate-Maintain; DB = Design-Build-Maintain.

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