

Dynamic Stakeholder Networks and the Governance of PPPs

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ABSTRACT

The growing gap between a global infrastructure deficit and the availability of public funding sources suggests private participation in the provisioning of public infrastructure will persist and even expand in the coming decades. However, the outcomes of these Public-Private Partnerships (PPPs) and their value for society, are discussed by many. The complicated governance arrangements of PPPs are at the heart of unpredictable outcomes. These complexities propagate uncertainties and risks for multiple stakeholders, which constrains supportive actions over a PPP's lifecycle. Much of the scholarship addressing PPP governance identifies critical success factors (CSFs) and key performance indicators (KPIs) from a private focal actor's perspective (and generally in a narrow time frame), but little attention has been paid to the fundamental challenge of dynamic stakeholder networks surrounding and encompassing PPPs. This paper empirically unpacks the project lifecycle into phases, and illustrates how stakeholder networks change with these phases.

This paper provides an analysis of an in-depth PPP highway transportation case within the US. Using retrospective primary and secondary data, the results from a phase-based network analysis demonstrate changing organizational arrangements within the PPP stakeholder network. This research uses stakeholder theory as a conceptual framework for identifying and analyzing actors and perspectives, and suggests that PPP governance is a challenge in *dynamic network governance*. Its contributions are at the intersection of public administration, business management, and project management, supporting a larger undertaking by scholars to propose integrated theory for the governance of complex PPPs.

KEYWORDS: Public-Private Partnerships, Stakeholders, Project Governance, Institutional Theory

1 INTRODUCTION

Public-private partnerships (PPPs) continue to be the source of academic inquiry, policy discussion, and even practical experimentation. In some economies, such as the UK, Canada, and Australia, PPPs have produced over two decades worth of observable experience and led to the establishment of PPP

programs for infrastructure development. Many other countries have also experimented with these arrangements and provide additional insights to PPPs as an infrastructure asset development and delivery system within the built environment. In PPP arrangements a public sponsoring agency in need of producing additional infrastructure capacity will “partner” with a competitively¹ selected private developer who will design, build, finance, operate and maintain (DBFOM) an asset for some predetermined period of time. Conceptually, a public sponsoring agency is able to leverage its resources by tapping private capital to produce public goods, receive specialized expertise beyond its own for novel or complex solutions, and can contractually transfer some predefined risks of development and operations to its private partner. By the same token, the private developer is expected to more efficiently deliver solutions, spread global best practices, be allowed to recover its investments, and earn a return on that investment significant enough to motivate sustained efficient asset performance and operations while providing a net positive value for money (VfM) (Monk et al.).

However, the seemingly well-aligned objectives of the public and private sides of PPPs often produce inconsistent outcomes. As a human society we know the clear linkage between infrastructure and human development, and the similar linkage with economic vitality and global competitiveness. Also known is a global critical infrastructure deficit of nearly 21 trillion dollars over the last 18 years (Dobbs et al.), while public debts have increased by nearly 50% in the last decade alone (IMF). The clear implication is that traditional pools of available capital for public procurements have become scarcer, particularly since the 2008—2009 financial market turmoil. Simultaneously private capital (such as institutional investors) are looking for long-term, risk-adjusted investments like infrastructure assets, and have demonstrated keen interest in the expanding infrastructure investment asset class (Sharma). Then why has private capital been slow to fund green-field infrastructure assets through PPPs?

Unsurprisingly the answer is risk and uncertainty. PPPs are typically one-off, long-lived, highly asset-specific, multiphase transactions, embodied by a large dynamic group of stakeholders in a changing environment. In a vast pool of stakeholders, goals do not universally align with those of the public sponsor and/or private developer, and in some cases are oppositional. PPPs represent a type of “wicked problem,” with no solution that satisfies each stakeholders’ utility function (Rittel and Webber). PPPs can be conceptualized as networks of stakeholders, each actor with different levels of saliency (power, legitimacy and urgency) (Mitchell, Agle and Wood), connected by various formal and informal ties, holding uniquely disparate objectives. Thus the engagement and management of stakeholders is a primary concern for PPPs (De Schepper, Doms and Haezendonck; El-Gohary, Osman and El-Diraby), and developing life-cycle governance systems for such complex wicked problems from the stakeholder or actor-level is a task only recently receiving attention (Monk et al.). Hence, the motivating question of this exploratory research paper: given their dynamic complexities, how do stakeholders interact with each other over a PPP asset’s life-cycle?

There are a host of critical success factors (CSFs) and key performance indicators (KPIs) for PPPs (Zhang; Li et al.). Yet these often represent static structural aspects of PPPs, and are only recently beginning to identify the increased temporal aspects of their lengthy life-cycles (Garvin et al.). Similarly, stakeholders are oft cited as influential in PPPs, but pay little attention to how they interact within the PPP over time. A general observation of PPP arrangements may suggest that such partnerships are incorrectly treated using the governance logic of traditional contract theories and traditional infrastructure delivery arrangements. This is somewhat of a contradiction when considering that these public-private arrangements are considered “partnerships.” Ironically, it appears that a third category of actors (in addition to the public sponsors and private developers), a set of *civic* actors also play a central part (Kivleniec and Quelin), though often only involved in the development of PPPs peripherally. These civic actors include user publics, impacted publics, and professional politicians, evidenced in social movements and political contests and maneuvering.

¹ In some cases an unsolicited proposal may be presented to public sponsors, and additional competitive proposals may or may not be solicited by the sponsor, depending on applicable legislative constraints.

As international experiments with PPPs have continued over the last decades, and evidence suggests this trend will expand, scholars have produced hundreds of papers and reports to describe various aspects of these arrangements. However, studies have been unable to identify consistent outcomes (Hodge and Greve), a fact that partially motivates this approach. This paper begins a line of research into micro or actor-level influences of PPPs and empirically unpacks network dynamics of PPPs across multiple phases of asset development and operations. We apply a conceptual framework from stakeholder theory to illustrate how changes in network composition are correlated with PPP development-phase dynamics, demonstrating the emergence of institutional fields around PPPs at the actor-level.

2 THEORETICAL POINTS OF DEPARTURE

Neo-institutional theory offers a theoretical foundation in addressing “processes by which social structures, including both normative and behavioral systems, are established, become stable and undergo changes overtime” (Scott "The Institutional Environment of Global Project Organizations"). Additionally, the novel application of stakeholder theory as a conceptual framework is useful for incorporating an actor-centric focus on attributes, objectives, and responses. Specifically in helping answer the question; “What are the underlying mechanisms of the way in which stakeholder interests are coordinated” (Freeman et al.)? Previous applications in business, ethics, public administration, and planning, make stakeholder theory well suited for the inclusive task of incorporating perspectives of various public, private, and civic actors.

2.1 Institutional Theory

Institutional theory posits that organizations survive and become economically viable by achieving a measure of acceptability or legitimacy within the broader environment (Meyer and Rowan; DiMaggio and Powell; Scott *Institutions and Organizations: Ideas and Interests*). Institutional theorists analyze social structures, including procedures, rules, schemas, and routines that have become established as guiding principles for moderating organizational and social behavior in the face of institutional forces. This is important in the case of PPPs, as arrangements between public, private and civic actors (stakeholders) are predicated on their differing institutional backgrounds, which naturally produces potentially conflicting schemas and situational definitions of and within PPPs. Additionally, the arrangements of PPPs are often institutionally immature, meaning that actors may have little or no experience in PPPs and that regulations and norms guiding actions may not be established. Even when actors may have PPP experience, the specificity of PPPs suggests that the composition of regulator influences, a diverse stakeholder network, and other forces from the broader environmental context are likely to produce a considerably unique arrangement. As actors approach a PPP from their differing perspectives, how are they expected to behave? To what extent is that expectation shared among stakeholders? And how can a governance system be structured to address such complex diversity? These additional questions are refinements of the broader research question, and point to a similarly broad point of beginning to underpin the development of successful PPP arrangements.

PPPs can be conceptualized as organization fields, encompassing an array of actors such as suppliers, consumers, regulators, and competitors (DiMaggio and Powell; Jooste, Levitt and Scott). PPPs have a permeable boundary, allowing for the entrance and exit of different actors over the PPPs life-cycle (See Figure 1).

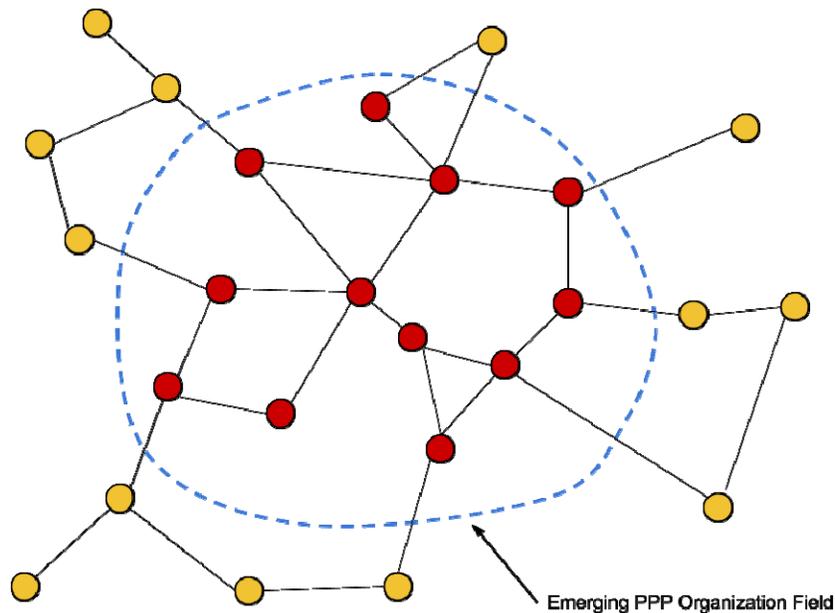


Figure 1: Conceptualization of a PPP organization field within a broader stakeholder network.

The concept of an organization field captures “a community of organizations that partakes of a common meaning system and whose participants interact more frequently and fatefully with one another than with actors outside the field” (Scott, 2001:56). While each PPP field is unique it encompasses aspects of interaction deemed important for understanding stakeholders and their interdependence with one another as attending to: relational systems, exchange, formal and informal hierarchies, dissimilar and similar organizational forms, emergent as well as established organizations, conflicts, consensus, and the wider environment (Scott "The Institutional Environment of Global Project Organizations"). This view of PPPs as organizational fields is compatible with Fligstein and McAdam’s conception of strategic action fields (SAFs), “meso-level social order where actors (who can be individual or collective) interact with the knowledge of one another under a set of common understandings about the purposes of the field, the relationships in the field (including who has power and why), and the field’s rules” . We consider a macro level—broad industry (or market sector) networks, a meso-level—individual PPP fields, and a micro actor-level—individual and organizational stakeholders. We use the “three pillars” of institutional theory to understand regulative, normative, and cultural/cognitive aspects of PPP fields that shape and are shaped by stakeholders (Henisz, Levitt and Scott).

2.2 Stakeholder Theory

Stakeholder theory was developed as a perspective of strategic business management, where a stable organization could evaluate and meet the challenges of its external environment as it “takes into account all of those groups and individuals that can affect, or are affected by, the accomplishment of [the firm’s] organizational purpose (Freeman 25). Freeman illustrates this external environment as a broader network including organizations in the firm’s supply chain, government regulators, policy makers, consumers, media, special interest groups, etc. This theory was a departure from traditional strategic management theory, which considered only the shareholder as the dominant stakeholder of interest to the firm. Since Freeman’s original work, the concept of stakeholders has been adopted from the domain of

strategic management to areas including business ethics, corporate social responsibility (CSR), and environmental justice. These perspectives on stakeholder theory suggest a normative treatment of stakeholders and their “rights” as impacted by a firm’s pursuit of its objectives (Laplume, Sonpar and Litz)². The distinction between stakeholder engagement as strategy vs. a moral responsibility continues to be debated. We acknowledge the presence of this normative debate, however our conceptual use of stakeholder theory is for identifying and understanding stakeholders towards the development of a governance system capable of meeting and adapting to influences from the broader environment, as well as institutional forces from and on stakeholders in the PPP field that are affected by the PPP or that may affect it. In so doing, we reject a single focal organization and consider all stakeholders manifesting their interests in the stakeholder network (evidenced by ties to other actors). Additionally, the use of stakeholder theory for PPPs emphasizes the presence of bilateral interest between the partnership (ego) and other actors (alters) (See Table 1). This distinction is necessary, as successful governance is most likely sustainable when rooted in the objectives of key current and future stakeholders.

Table 1: Comparative distinctions in the use of Stakeholder theory across multiple domains

	Strategy	Ethics	PPPs
Purpose	Firm strategy	Normative treatment of stakeholders	Shaping life-cycle governance system
Theory Foci (ego)	Single Stable Organization	All Legitimate Alters	Ties between actors
Direction of Interest (from ego to alters)	Unilateral	Unilateral	Bilateral

The promise of PPPs as an alternative infrastructure delivery system, which optimizes the advantages of public and private competencies, has necessarily led to questioning the practicality of integrating such a complex process. As it has been emphasized here, PPPs are embedded in complex networks of interrelated and heterogeneous stakeholders. This network of stakeholders may substantially alter the PPP directly by, for instance, lawsuits and forms of social movements, or indirectly, by influencing public requirements or challenging enabling legislation. To govern a PPP successfully is to manage a changing network of stakeholders with potentially shifting perceptions and objectives. Developing a cooperative environment with stakeholders would reduce the number of conflicts and minimize opportunistic behavior, therefore avoiding important delays and costs, and developing an initial pattern of continued support in the event of negative influences on the PPP. Earlier attempts by transaction cost economics (TCE) acknowledged the role the environment or “atmosphere” played in the success of the contract performance, and aspects of “asset specificity” suggested some consideration be given stakeholders (Freeman and McVea; Williamson); yet micro-economists have paid little attention to the impact of the stakeholders for successful contract performance. In fact, stakeholder theory was developed as a way to reconcile neo classical-economics’ theories of value creation with the human complexities of stakeholder relationships (Freeman et al.). This research begins to understand the value creation and value capture processes between PPP stakeholders.

² A near overwhelming interest by these disciplines has actually caused some scholars to argue for a rebalancing of the discussion to reemphasize the aspect of stakeholder theory as a strategy for flexibly addressing all stakeholders in the simultaneous parallel pursuits of firm preservation and optimally benefiting those stakeholders.

3 STUDY APPROACH AND RESEARCH SETTING

The general research approach is an exploratory in-depth case study for the development of a US highway transportation asset through a PPP arrangement. The PPP is known as California's State Route 91 Express Lanes (SR91X), and this retrospective case covers over three decades of development and operations activities. Case study research is an appropriate way to explore specific issues within a "bounded system" (Creswell). Additionally, case study research allows for a rich understanding of particular cases, including the uncovering of hidden, indirect, or otherwise nuanced elements and causal factors (Eisenhardt). Such a design is limited in its ability to generalize findings to other cases, but is well-suited as a 'theoretical first step' to inform scholars of potential elements influencing the life-cycle governance of complex PPP arrangements. As this is the first component of a larger research program, it was necessary for the identification of salient aspects of PPPs for future cross-case analysis and the beginning of theory application.

In case study research the selection of appropriate cases is central to the research design and its effectiveness (Eisenhardt and Graebner; Flyvbjerg). The SR91X case was selected as it satisfied two important criteria. The primary consideration was to select a case where the broader environment could encompass a maximal number of potential internal and external forces to be documented and analyzed. This was important as we wished to search widely for elements that may be found to influence the PPP governance structure. The U.S. is relatively young in its experience with modern PPPs, meaning there has been less institutional support for their development. Particularly in the case of early U.S. PPPs, there was historically little in the way of a PPP-development 'road map' for public agencies or private developers to follow. This fact was important to us, as we wished to explore 'raw' aspects of PPPs and their emerging fields, with the ensuing unexpected obstacles and unintended consequences. As the first modern highway infrastructure PPP (since the 1950's), SR91X provided a number of such factors.

The highway transportation sector was also purposefully selected. In order to understand the dynamics of perceptions and reactions as a PPP moves across development phases, it was necessary for a case to have sufficient recordable data in each phase. The U.S. highway transportation sector contains several PPPs that have transitioned into their operations phase. Other infrastructure sectors, such as public service buildings (e.g. hospitals, civil government buildings, schools) are only now seeing assets begin their operational life. Another reason for selecting highway transportation PPPs, was that such arrangements generally garner the widest publicity, producing a maximum number of recorded observations accessible through secondary data sources. This is due to the highly visible nature of the PPPs. They are often located in densely populated areas, affect the most area in terms of land disturbed, and assets are normally situated in high traffic areas where stakeholders are directly and consciously aware of the PPPs (particularly during lengthy and disruptive construction timelines). Once operational, high volumes of user-stakeholders interact directly with the PPP—meaning they actually use (drive on) the asset, vs. telecom, water, and wastewater PPPs where user-stakeholders experience a service provided by a PPP asset, not the asset itself. Finally, a highway transportation PPP often incorporates multi-national teams for development and frequently introduces new technologies. These represent additional types of stakeholders and other institutional factors potentially influencing the broader environment of PPP development.

The second case selection criterion was availability of primary and secondary data sources. SR91X was preliminarily analyzed along with several other peer cases, and proved itself to be well documented by media, government, and academic organizations. As a result, multiple secondary data outlets provided significant coverage for archival analysis. Additionally, primary data sources with direct experience in multiple phases of the PPP were available and willing to be interviewed for this research.

One final criteria or distinction should be included, a definition of PPPs for the purpose of this paper. Purely public or purely private arrangements are two sides of a spectrum, and in the strict sense there is seldom an arrangement where a public or a private organization is not working with or influencing the other in some degree (Dewulf, Blanken and Bult-Spiering). Thus many arrangements can be loose conceptualizations of public-private partnerships. For our purposes, we adopt another element in

the following working definition: “a public private partnership (PPP) is an arrangement between a public sponsor and a private entity in which a public asset or program is privately financed, allowing the public sponsor to retain asset ownership and the private entity to assume a first-loss position.” This definition necessarily includes a strict financial component, which highlights a set of stakeholders from a finance perspective that we feel dramatically alter external and internal elements of the PPP field. Since the Second World War, the U.S. has developed only a few dozen U.S. highway transportation PPPs where a private actor has participated in infrastructure projects on an extended basis and in this first loss position.

4 DATA COLLECTION AND ANALYSIS

This is a mixed-data study, employing the collection of multiple qualitative types of data with a complementarity logic (Small). Primary data was gathered from in-depth and semi-structured interviews of senior-level executives, managers, and directors throughout the development lifecycle and current operations of SR91X. Interview participants were sampled from a cross-section of stakeholders along the project timeline, occupying different positions and roles as employed by various organizations. Access was obtained by a combination of chain-sampling techniques and the result of researchers’ networking among participants in SR91X. Interviews began with participants most closely connected to the development and management of SR91X in the early shaping phase. Retrospective analysis can be difficult when asking respondents to think back on past experience. This research mitigated the problem of recall by focusing on critical events that materially shaped SR91X, which are the most easily recalled by respondents and verifiable with secondary data sources. In addition to understanding which events were perceived as critical, follow-up questions sought to inform our understanding of ‘why’ respondents held these perceptions. This was necessary to connect perceptions and meaning to stakeholder’s actions following these events. PPPs are comprised of a diverse network of stakeholders, each with differing interests that underpin their identities, objectives, and repertoires of action. Hand-written notes were taken during semi-structured interviews, and were latter typed up for coding. In-depth interviews were recorded and transcribed verbatim by the researchers for coding. A total of 12 one-hour interviews were conducted. Qualitative software packages, NVivo and Dedoose, were used at different phases of this research to assist in coding and comparing responses from interviews³.

We also consider our approach within the new archival tradition of organization research: employing formal analytic methods; emphasizing organization processes, relations and shared meanings; and an interest in the underlying logics that connect these elements (Ventresca and Mohr). Archival collection of over 100 publicly available media accounts, fact sheets, annual reports, government documents, academic papers, and other similar sources were also collected and coded. These data, along with interview data, were used to construct a project timeline for SR91X. By analyzing 89 critical events and actor responses in this timeline, a register of project stakeholders was developed. The manner of interaction between stakeholders from this timeline, coupled with first-hand accounts, provided insights as to the types of relationships between stakeholders and the types of capital, logics, and actions in the organizing process and the emergence of a PPP-level institutional field. These stakeholders (nodes) were mapped in an influence (ties) network at multiple points through the PPPs development.

4.1 Case Description

SR91X is a California highway transportation asset consisting of a 10-mile expansion of four tolled lanes (two in each direction) along the heavily traveled East-West corridor of State Route 91 between Riverside County and Orange County (See Appendix A). The 91 express lanes were constructed in the

³ As interview excerpts and other potentially sensitive information has been included in this paper, pseudonyms are used to project participants’ identities.

highway median between the existing un-tolled general-purpose lanes and separated by plastic pylons (See figure 2).



Figure 2: The 91 Express lanes in Orange County California (Web-1)

The lanes are tolled using an account-based system of payment, where registered users vehicles are recorded using automatic photo capture of license plates and/or in-vehicle transponders at non-stop electronic gantries. The free-flow aspect of the system allows traffic to maintain highway speeds. A variable congestion-pricing scheme is used for establishing toll rates, where historical travel data is used to determine graduated peak times and rates for lane usage. These published rates are updated on a quarterly basis. The SR91X asset was developed on land under the care of the California Department of Transportation (Caltrans), the state agency responsible for highway, bridge, and rail transportation planning, construction, and maintenance. Caltrans, the sponsoring agency, entered a concession agreement in 1993 with the private development company California Private Transportation Company (CPTC). CPTC was incorporated as a special purpose vehicle (SPV), a temporary organization of a consortium of corporate owners for the purpose of designing, building, financing, operating and maintaining the asset. The concession agreement contractually allowed CPTC to collect the tolls to recover their investment and earn a profit subject to the agreement's terms and conditions.

4.2 SR91X Development Setting and Context⁴

In 1980 State Route 91 had over 91,000 average vehicle trips per day and was becoming one of the busiest stretches of highway in the country. As real estate prices in Riverside County were significantly lower than neighboring Orange County, and Orange County had thriving employment centers, individuals continued to move east for lower costs of home ownership while maintaining employment in

⁴ In addition to other sources, this summary draws from the extensive work produced by Jose Gomez-Ibanez and John Meyer of the Harvard Kennedy School's Taubman Center, for the U.S. Department of Transportation. Readers interested in an extended treatment of the broader environment should see their report (Gomez-Ibanez and Meyer).

Orange County. The topography of the region illustrates a geographic challenge of building additional capacity anywhere besides the single valley connecting these adjacent portions of Orange and Riverside counties (See Appendix B). State Route 91 was an effectual “land bridge.” As a result, the growing populations in Riverside County and the Inland Empire increased transportation pressure on the 91. By 1989 traffic on State Route 91 had more than doubled, with over 188,000 average vehicle trips per day.

During the time that State Route 91 was experiencing extreme traffic growth, California continued to experience constricted funding sources for transportation and increasing highway construction costs, two factors present in the 1970s and 1980s. In 1982 California increased the state gasoline tax from \$.07 to \$.09 per gallon, the primary funding mechanism for state highway construction, but this amount failed to match inflation, let alone the growing demands for highway infrastructure. Then in June of 1988 a vote for the Governor’s state bond initiative to help close the highway-funding gap failed.

In response to the general highway transportation congestion of the greater Los Angeles metro area, the non-profit Reason Foundation published Policy Study No. 111 “Private Tollways: Resolving Gridlock in Southern California” in May of 1988 (Poole). Borrowing from European, Asian, and Australian examples, the study suggested three innovations that could relieve traffic pressure; congestion pricing, private toll roads, and automatic electronic identification and toll collection. Then as the bond referendum failed, Robert Poole, Jr., director of the Reason Foundation, wrote and op-ed for the Los Angeles Times highlighting findings from the foundation’s recent study. After the LA Times printed the piece, the Governor’s Office of Planning and Research, the new top leadership at Caltrans, and leaders of other government and quasi-governmental organizations began discussing the possibility of private sector participation in the development of public infrastructure. Approximately 1-year later California Assembly Bill 680 (AB 680) had passed and was signed into law with immediate effect. Key points of AB 680 stated that: (California)

- California needed an efficient transportation system
- Public sources of revenue had not kept pace with transportation needs
- An important alternative was privately funded Build-Operate-Transfer projects (*a synonym to this conception of modern PPPs*) for infrastructure delivery
- Private entities will have the right to charge tolls to recover investment and operations costs, including a reasonable profit
- Caltrans should be permitted & encouraged to develop 4 demonstration projects

5 FINDINGS

Our analysis of SR91X began with the creation of California’s experimental pilot enabling legislation, through its multiple development phases, which persist in routine operations today. This effort delivered two key findings. First, a description of distinct phases in a PPP, coupled with discrete critical events separating these phases. Second, the observation of key changes in stakeholder network structure over the course of these events, and the presence of a dominant actor, which likewise changed as SR91X transitioned through the various development phases.

5.1 PPP Development Phases

In the few years following AB 680, SR91X was proposed through a competitive process and eventually a concession agreement was signed between Caltrans (the public sponsor) and the California Private Transportation Company (CPTC) - a developer SPV consortium of three corporate organizations, including two U.S. construction firms and one European toll road operator. The SPV took an equity stake in the project, and arranged financing for the balance through a package deal with one U.S. bank and two European Banks. In the twenty years following the original concession agreement, four key phases and seven discrete events marking the transition points between each phase are observable (see Table 2). Comparisons with other green-field U.S. highway transportation PPPs suggest a routine pattern of events.

Table 2: List of key development phases for SR91X and the discrete critical events in each phase

Phase	Event	Description
Identification		broad conceptualization of ‘purpose and need’ for infrastructure, development and search for potential solutions
	Industry Mtg. / Unsolicited Prop.	asset specific discussion (or proposals) to fill stated and/or presumed ‘purpose and need’ (public or private initiated)
	RFP	public sponsor publishes a request for proposals setting forth criteria for need-based solution submissions
Procurement		public agency and private organizations refine scope, evaluate alternate technical concepts, negotiate concession agreement
	Proposal	private organization teams submit their proposals to the public sponsoring agency
	Award	public agency reviews, evaluates, ranks and selects winning proposal
DBF		private SPV is incorporated, finance package is arranged, technical design, construction operations
	Financial Close	SPV's financial package complete and approved by public sponsor, design and construction commences
	Commission	SPV completes construction, conducts operational tests, and commission asset for use
OM		SPV operates and maintains the asset for the concession agreements defined term
	Secondary Transaction	Having de-risked the PPP of construction and development risk, developer exits (sells stake in concession)

5.2 Stakeholder Network Changes

Five stakeholders or stakeholder groups, dominant in the development of SR91X, are conceptually mapped in Figure 3. This illustrates the relative involvement of these key stakeholders over the course of the development process and into operations (X and Y axes are un-scaled, indicating relative positions as coded by researchers). As specific stakeholders interacted within the PPP and with each other, and in consequence with the critical events, the level of involvement changed dramatically. In the SR91X case, Caltrans took a dominant position at the beginning of the project, but upon concluding award they became less involved with the PPP. CPTC (and their parallel competition) were involved prior to the official RFP, and continued to participate as SR91X developed. As a result of a concession award to CPTC, the SPVs competition quickly diminished, but CPTC continued to develop a dominant place in the PPP. As financial close was achieved, CPTC had become the most involved stakeholder in SR91X. Then as the project was commissioned and early operations commenced, the majority ownership in the SPV consortia recognized that the business model was not consistent with their operations. Daniel Hanson, a private executive closely involved with SR91X, noted, “It was lots of work, lots of friggin politics, so it didn’t make sense to continue with equity in PPPs.” Having de-risked SR91X of construction and early development risks, CPTC sought opportunity to sell their equity in the concession. After an unsuccessful sale attempt to a newly formed nonprofit organization (established for the purpose of privately owning and managing SR91X), CPTC eventually made an agreement with Orange County Transportation Agency (OCTA) to buyout their equity in the agreement, who effectually become the new concessionaire. Although, OCTA was interested in maintaining the existing business model and contracted with the previous SPVs operations equity partner who retained (and later expanded) their existing operations staff while OCTA dedicated less than two full-time equivalents to manage the asset.

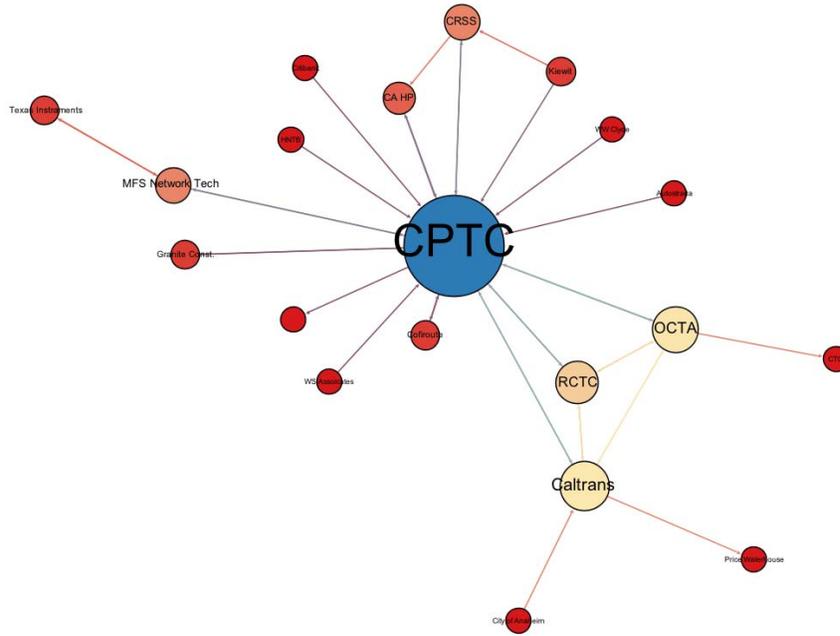


Figure 5: SR91X Network structure at T2, SPV as anchor-tenant

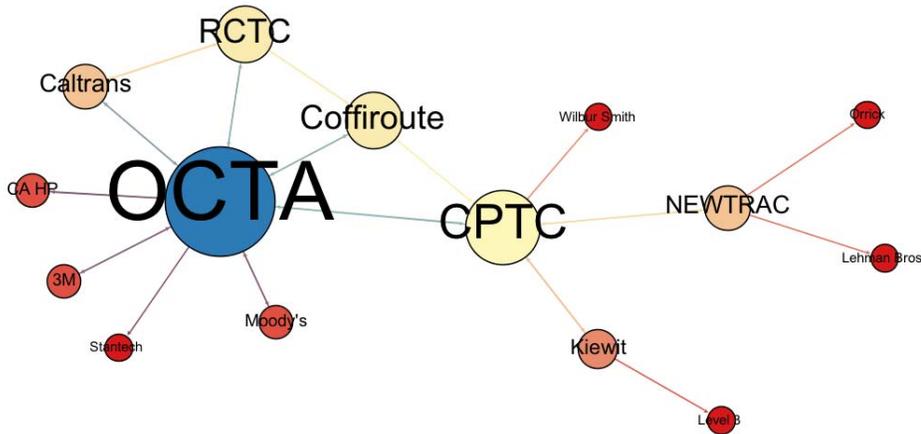


Figure 6: SR91X structure at T3, new concessionaire as anchor-tenant

6 CONCLUSION

Major infrastructure PPPs have an exceptionally long “shaping phase,” where a set of central stakeholders iteratively conceptualize and develop an asset concept by analyzing needs, functions, solutions, and forecasting support (Miller and Olleros). PPPs have an equally long operational contract phase, typically more than 30 years. During these extended time frames, multiple interconnected actors transition in and out of the stakeholder network with different levels of salience and even changing perspectives. This paper provides a description of four general phases, and seven key embedded critical events. Mapping these events with a network of over 30 key stakeholders illustrated a changing PPP network constellation, and most importantly the role transition between anchor tenants in the network. For example, the public sponsor has different motivations and tendencies for action than a private developer. Yet each holds a dominant role at different points in PPP development process. Later in the life cycle, the PPP SPV begins to interact more frequently with a civic set of actors, a group who often is unable to understand and recognize the outcomes of the development process. The practical implication of this exploratory work points to the need for governance arrangements of PPPs to have adaptive potential to accommodate those stakeholders and their participation in different (particularly later) stages of the PPP life-cycle. In some cases, invitations for early participation of later-stage stakeholders will be helpful in developing sustainable PPP governance schemes during the PPP shaping.

As emerging institutional fields in the nascent stage of PPP development continue, and actors remain ‘institutionally immature’ with respect to PPP arrangements, developers, sponsors, and policy makers can attempt forecasting models of stakeholder motivation and interactions. In this way stakeholders are the primary unit of analysis, carriers of their own institution responses when interacting with the PPP network. This presents a virtually untouched opportunity for continued research in the micro-underpinnings of PPP infrastructure delivery. Continued efforts in understanding PPP stakeholders across multiple cases, and developing models for interactions may be a key to resolving risk and uncertainties in green-field PPPs. Thus, opening the door to increased capital for critical infrastructure assets, and ensuring more sustainable governance for such complex and important arrangements.

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Web-1: <http://www.hntb.com/expertise/financial-resources/sr-91-hot-lanes>

Appendix A – Area Map of the 91 Express Lanes

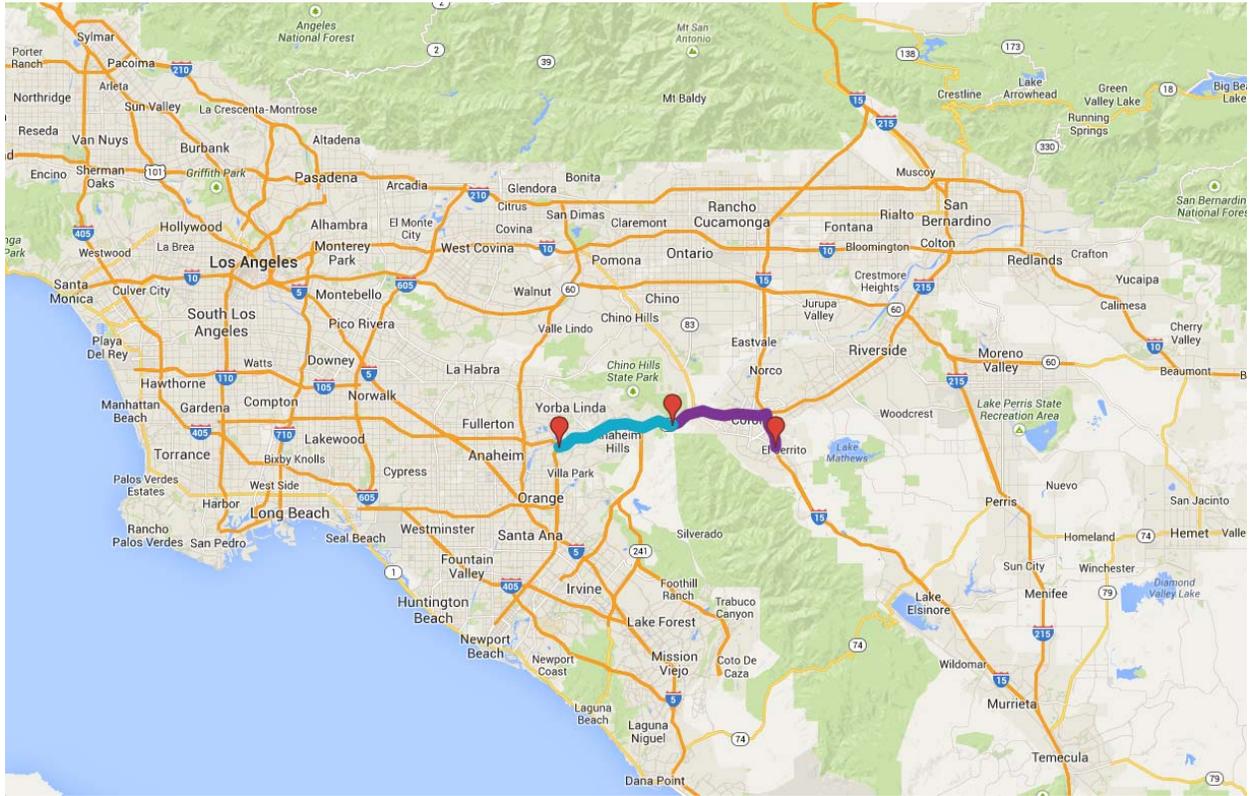


Figure 7: Area map of Southern California. The current 91 Express Lanes asset is colored blue. The planned 91 Project extension is colored purple. The separation point is on the Orange County – Riverside County line.

Appendix B – Topography of the 91 Express Lanes

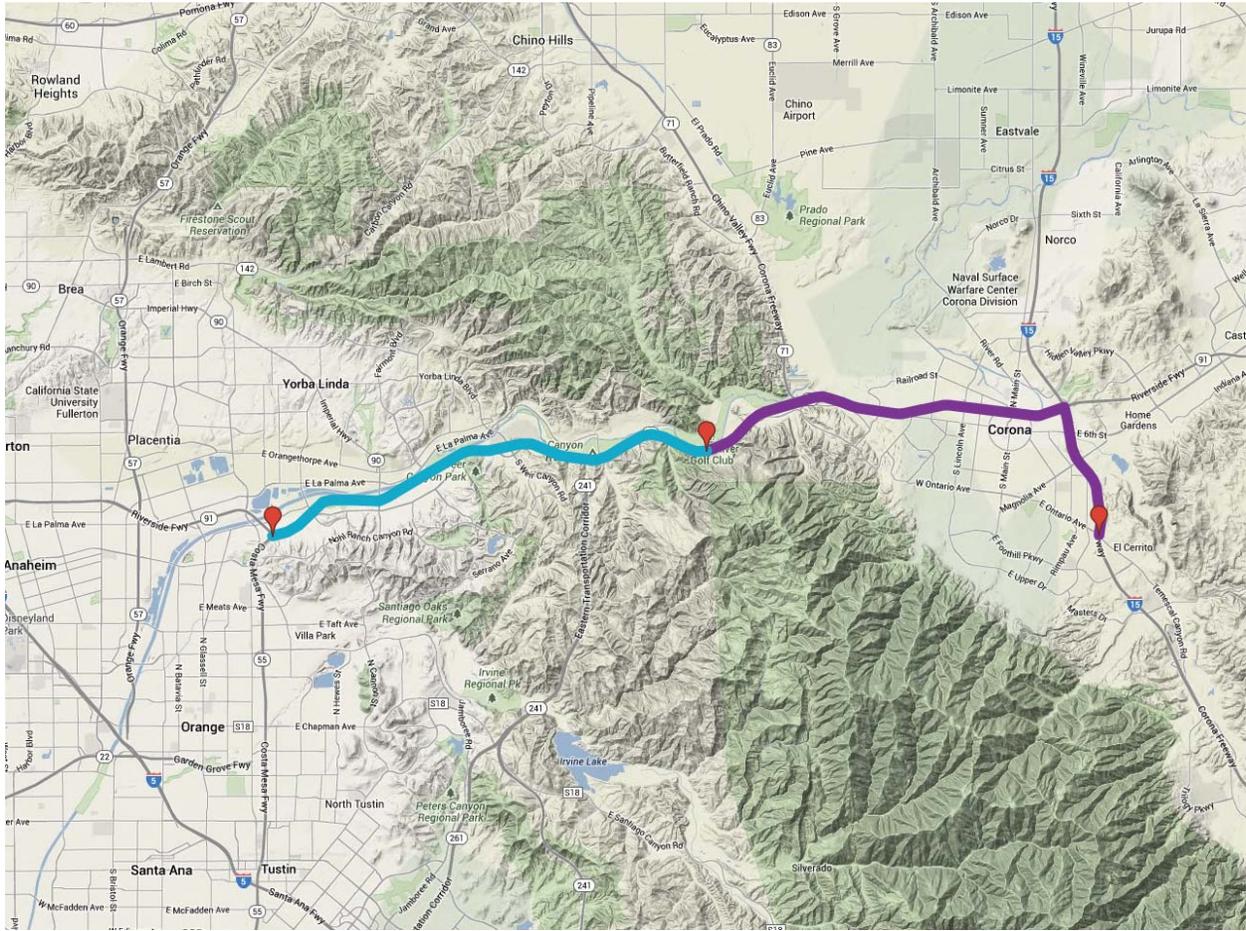


Figure 8: Topographic map of area surrounding 91 Express Lanes indicates that no alternate path may be easily/economically developed to connect Orange County with Riverside County in this region.