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Transportation Plans: Their Informational Content and Use Patterns in Southern California

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# Transportation Plans: Their Informational Content and Use Patterns in Southern California

A Research Report from the University of California Institute of Transportation Studies

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The University of California Institute of Transportation Studies (ITS) is a network of faculty, research and administrative staff, and students dedicated to advancing the state of the art in transportation engineering, planning, and policy for the people of California. Established by the Legislature in 1947, ITS has branches at UC Berkeley, UC Davis, UC Irvine, and UCLA.

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# Transportation Plans: Their Informational Content and Use Patterns in Southern California

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UNIVERSITY OF CALIFORNIA INSTITUTE OF TRANSPORTATION STUDIES

November 2018

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## Executive Summary

While a large amount of effort has been devoted to making and updating local transportation plans, little is known about the informational contents of these plans and their use patterns. This project attempted to identify key informational (both factual and visionary) contents of Californian cities' transportation plans and to investigate how the plan contents can be used by various stakeholders. This was accomplished through (i) a plan content analysis of a sample of general plans (recently adopted by the following eight municipalities in Orange County, California: Costa Mesa, Fullerton, La Habra, La Palma, Los Alamitos, Mission Viejo, San Clemente, and Westminster) and (ii) a plan use survey and follow-up analysis of survey responses.

All plans analyzed were found to convey a variety of information about their visions, goals, policies, and implementation strategies, but the plan content analysis revealed substantial variation in the way cities composed their general plans and integrated them with other plans/players. Compared to land use elements, circulation elements tended to focus more on their connections with other agencies (external consistency) than on internal consistency. However, little evidence was detected for the ability of general plans to address new technologies, alternative futures or spontaneous nature of urban development processes. It was also found that local plan characteristics can be shaped by both internal and external factors in a complex fashion.

The plan use survey, implemented through an online platform, yielded a low response rate which may indicate limited use of plans in the field. A majority of the survey responses, however, were positive about the usefulness and usability of general plans. In particular, the survey participants reported that they found the plans comprehensive, visionary, and well-organized, while relatively lower scores were obtained for two evaluation criteria: '[the plan] clearly explains what actions will be taken and when' and '[the plan] is relevant to my everyday life and/or work'. Furthermore, some respondents reported that they used general plans not for their professional duties but for other (non-conventional) purposes, suggesting that plan contents could be used for a variety of decision-making processes. The survey results also suggested that the presentation/visualization methods would make a difference in promoting wider use of the informational contents of transportation plans.

## Introduction

Given their large and enduring impacts, public transportation investment (or policy) decisions have been made with careful consideration of current conditions and anticipated future demand. Generally, in the US and many other countries, the public decision making takes place over multiple years, starting with a long-range plan making in which transportation goals and strategies are established in order to meet the changing mobility needs in the city/region and deal with various challenges in a timely manner. When needed, government agencies also develop special plans to guide a specific transportation project with consideration of the systematic connections between transportation and other important dimensions of our cities (or regions), particularly land use.

In the state of California, such plan making has long been mandated by the state. Since 1937, “all cities and counties [have been] required to adopt master plans [called ‘general plans’ nowadays] ... [and, in 1955] land use and circulation elements [became] required in the general plan” (p.9, California Governor’s Office of Planning and Research, 2003). Recently, as the California Complete Streets Act (AB 1358) gets implemented, “all cities and counties, upon the next update of their circulation element, must plan for the development of multimodal transportation networks.” (p.1, California Governor’s Office of Planning and Research, 2010). Other state legislations, including the well-known SB 375, have put emphasis on the importance of internal consistency – consistency of a locality’s circulation element with other general plan elements or policies it has adopted – and cooperation among jurisdictions to achieve regional Green House Gas (GHG) emission reduction targets set by the Metropolitan Planning Organization’s (MPO) Sustainable Communities Strategy (SCS) and Regional Transportation Plan (RTP).

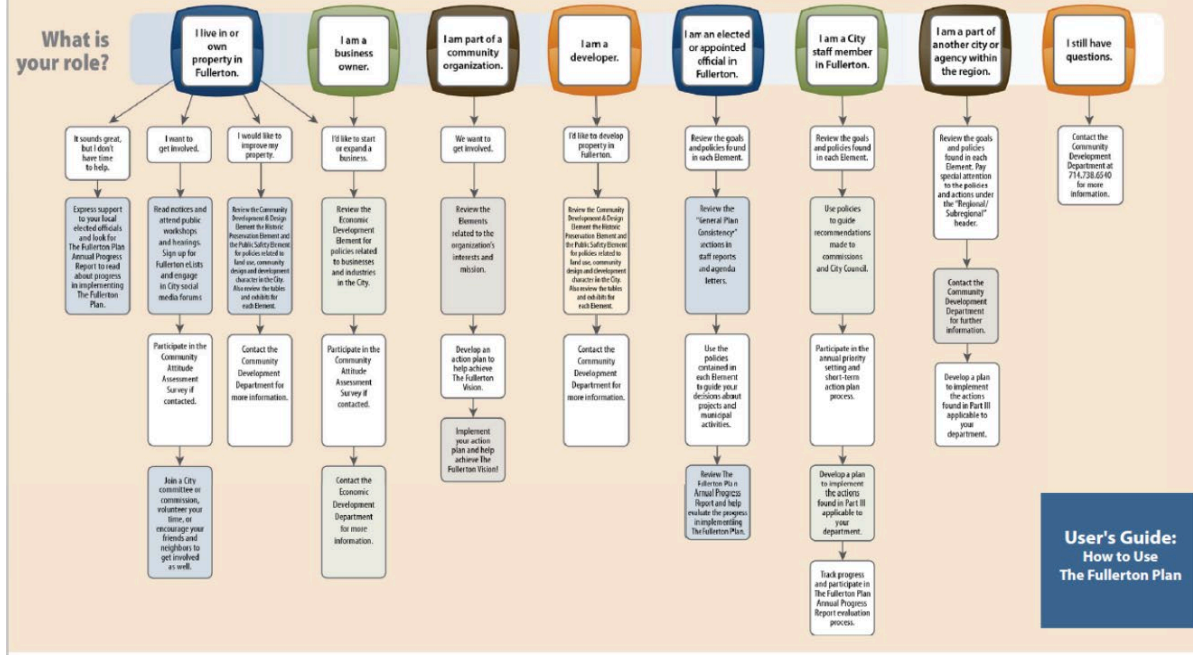
However, despite the state-level guidelines and requirements, general plan making rests with individual localities, and the content/structure of plans does vary markedly across cities (Kim et al., 2018). Some cities have tended to simply list their goals and policies, while other cities have tried to provide rich information using various forms of written/visual presentation. The variation can make a difference, because general plans serve as a blueprint for the future development in and around each municipality. While the information presented in these plans does not necessarily focus on a specific investment project or regulatory action that can shape development patterns directly, the plan contents can play an important role in informing stakeholders and/or giving a signal to other agencies (see e.g., Hopkins, 2001; Kim, 2010; Hopkins and Knaap, 2018).

Little is known, however, about the informational contents of these plans and their use patterns. Some transportation/planning professionals are skeptical about the use of these plans, while others have started to make efforts to better organize the plans and promote wider use of plan contents not only by government agencies but by other stakeholder groups (see Figure 1 for two recently adopted general plans – Fullerton (2012) and Westminster (2016) – in which explicit attention was paid to ways to use plan contents more effectively).

# User's Guide: How to Use The Fullerton Plan

Start Here:

Review the Introduction and Part I: The Fullerton Vision to gain an understanding of purpose of The Fullerton Plan and the community's vision for the future.



**Who Will Use the General Plan?**

Using the Vision Statement as a foundation for decision-making, city councils, commissions, and staff, along with members of the community and other agencies use the goals and policies of the General Plan on which to make decisions.

**City Council and Commissions:** use the goals and policies of the general plan as a basis upon which to make both long-term and short-term decisions, determine long-term objectives, generate and evaluate budgets, plan capital improvements, and prioritize tasks.

**City staff in all departments:** will also reference the general plan when considering development applications, capital improvements, service programming, and departmental budgeting.

**Community members:** can help implement the vision of the City by seeking guidance for preserving and enhancing the community through the general plan's goals and policies.

**Other local and regional agencies:** will refer to the general plan when projecting needs and services. The general plan is truly the City's collective guide to the future.

Source: The Fullerton Plan (Adopted May 1, 2012)

Source: City of Westminster's General Plan (Adopted September 2016)

Figure 1. Examples of plan user's guide

Similarly, existing transportation research tended to focus on the impacts of actual investment projects or regulatory legislations rather than on the importance of plan making/using. In the planning literature, a growing number of studies have examined plan implementation or plan quality (see e.g., Talen, 1996a and 1996b; Berke and Conroy, 2000; Berke and Godschalk, 2009), but little attention has been paid to how transportation plans have been used by various actors and what drives wider (and more effective) use of plan contents.

To fill this gap in the literature and practice, this project attempts to identify key (informational) contents of Californian cities' transportation plans and investigate their use patterns through:

- **Plan content analysis** of a sample of general plans which have been newly adopted by eight cities in Orange County, California to reveal how current local plans are organized to convey various types of informational contents
- **Plan use survey (and follow-up analysis of survey responses)** to investigate how informational contents of these plans have been used by various (potential) user groups and what types/formats of plan information they are likely to find useful

The goal of the plan content analysis is two-fold: (i) to inventory the informational (both factual and visionary) contents of the selected plans and (ii) to examine their structural characteristics (specifically, composition, integration, and adaptability) that can make a difference in the use of plan information by various stakeholders, while the plan use survey is conducted to better understand what prevents or facilitates the use of plan contents for various purposes. Overall, this project aims to enhance our understanding of the nature of current transportation plan making/using processes by revealing how local transportation plans convey various informational contents and in what ways such information is utilized by government agencies and other stakeholders. It is hoped that the findings of this project will contribute to improving the way we make plans and disseminating valuable plan information more broadly.

## Planning Theory and Practice Without Plans?

Over the last few decades, the gaps between planning theory and practice have been increasingly acknowledged and discussed in the literature (see e.g., De Neufville, 1983; Alexander, 1997). For instance, Alexander (1997 and 2010) attributed this issue to the nature (or prevalent mode) of theoretical knowledge diffusion in planning which mainly takes place in the form of 'enlightenment' as opposed to 'translation'. Furthermore, in his later article, titled "There is no planning—only planning practices", he proposed to move away from "abstract generalizations about 'planning' to develop mid-level theories for particular planning practices ... [which] can be based on realistic empirical analysis and case studies of contextuated planning practices, relate to epistemology that fits the relevant epistemic practice, and develop contingent prescriptions for good practice usable in that context." (p. 99, Alexander, 2016).

There have been many other attempts made to bridge the gaps and better connect new theoretical developments and everyday planning work in the field. Given widespread frustrations with modernist paradigms and their rational planning models, a growing number of planning scholars have been actively engaged in the so-called 'practice movement' (Liggett,

1996), bringing scholarly attention to what planners actually do and attempting to draw more tangible lessons from and for practice (Watson, 2002; Loh, 2018). While this (broadly defined) movement has taken place in various ways, one of the most visible (and influential) developments has been a ‘communicative turn in planning theory’ (Healey, 1992 and 1996) in which emphasis is placed on democracy, collaborative/deliberative decision-making, and citizen participation (Yiftachel and Huxley, 2000).

Somewhat ironically, however, this movement seems to have directed attention away from the importance of plans, a core element of the profession’s identity “giving planning its name” (p. 216, Neuman, 1998). There has been a noticeable shift “from plan to process” (p. 208, Neuman, 1998) or subordination of plans in both planning theories and practices. As noted by Ryan (2011), “[p]lanners may read plans frequently, but the understanding or interpretation of plan content seems to be treated by the profession as something that is either too obvious or too unimportant to require explicit discussion” (p. 309). In the field, ordinary planning activities are not centered around plans as much as they used to be. Local plans have been increasingly made through outsourcing and/or work division, while public planners still play an important role in many steps of plan making and approval processes.

This does not mean that planners have abandoned plans in their research or practice. Among others, Hopkins and his colleagues have provided a useful perspective from which to grasp why plans (or a ‘web of plans’) do matter and how their informational contents can be used for a variety of purposes (see e.g., Hopkins, 2001; Donaghy and Hopkins, 2006; Hopkins and Knaap, 2018). Attention has also been paid to ways to develop data models or information systems that can enable stakeholders to use plan contents in a systematic manner for more informed decision making (see e.g., Hopkins et al., 2005; Finn et al., 2007; Kaza and Hopkins, 2012). Moreover, it has been suggested that plans can help us better deal with intrinsic uncertainties and transaction costs involved in urban land use/development processes (see e.g., Schaeffer and Hopkins, 1987; Dawkins, 2000; Kim, 2011).

It is important to note that an increasing number of studies have been devoted to examining to what extent plans get implemented and under what circumstances they tend to be implemented in a more successful manner (see e.g., Talen, 1996a and 1996b; Laurian et al., 2004; Brody and Highfield, 2005). In recent years, planning scholars have also been quite active in “searching for the good plan” (Berke and Godschalk, 2009) through a systematic evaluation of plan quality. These plan evaluation studies have often employed content analysis methods, as done in this project, and provided guidance on how plan contents can be classified and analyzed, while there are some methodological issues to be addressed (Lyles and Stevens, 2014).

However, despite all this continuing effort and progress, our knowledge about the informational contents of (transportation) plans and their use patterns is quite limited. Much remains to be learned about what constitutes an informative plan for a broad range of (potential) user groups – as opposed to what makes a good plan for a certain objective, such as sustainable development – and why there have long been complaints about the usefulness and usability of plans. While scholars have provided some fundamental criteria, such as consistency constraints and means-

ends coherence (Bratman, 1987; Hoch, 2007) and discerned their internal and external dimensions (p. 229, Berke and Godschalk, 2009), there has been a dearth of empirical tests from various user perspectives, leaving it challenging to operationalize these concepts and apply them to analysis of diverse plan use patterns (which are much broader than the question of whether plans get implemented or not). Furthermore, in the planning literature, little effort has been made to thoroughly understand the logic of information seeking behaviors in various settings and important structural aspects of information provision that can make a meaningful difference (see e.g., Choo, 1996; Dahlin et al., 2005; Georgiou and Makri, 2015).

## Study Areas and Methodology

### Plan Sample

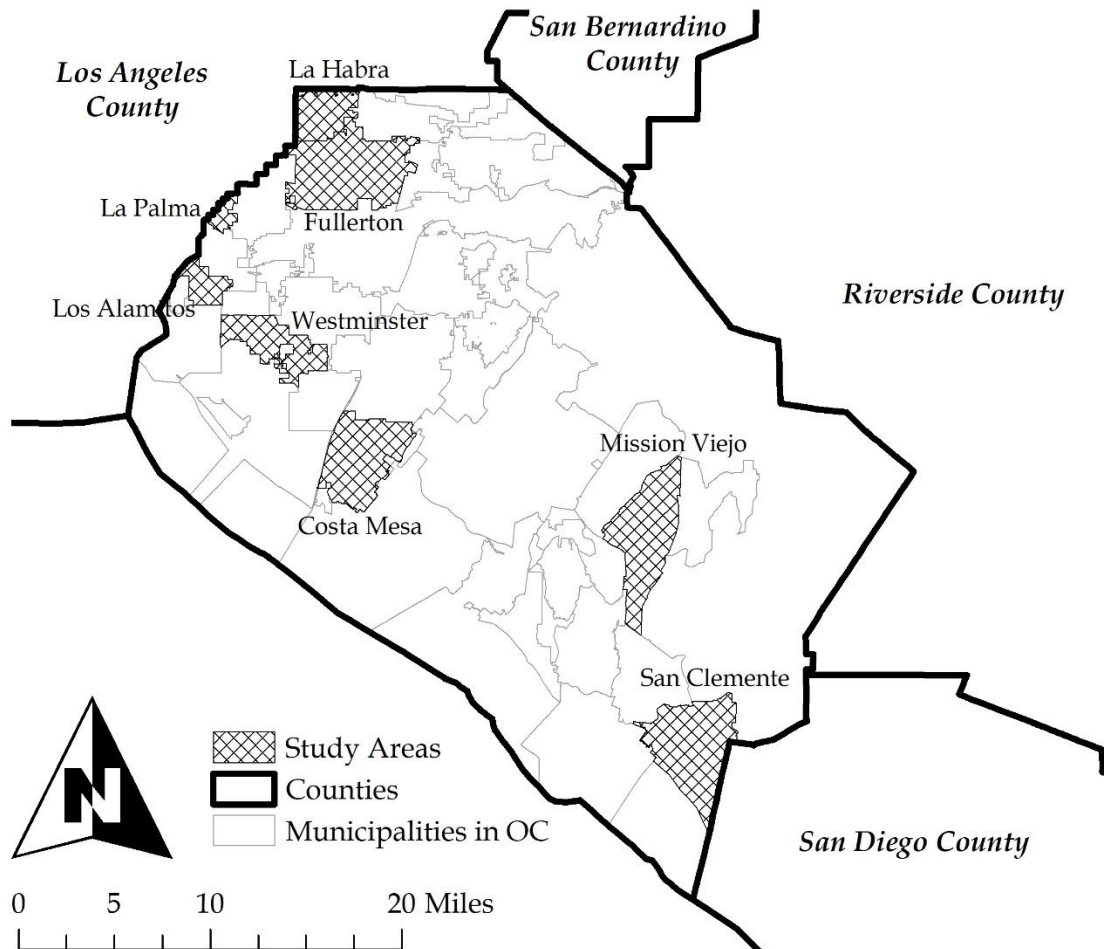
As briefly mentioned above, this project aims to better understand local transportation plans and their use patterns, and the first phase of the project has been conducted to inventory the contents contained in a sample of general plans and examine some structural characteristics of the plans that can facilitate or hinder the use of plan contents. This has been accomplished by employing a content analysis approach (see the next section for details) which has been well established in social sciences (Weber, 1990). More specifically, a plan content analysis has been performed on general plans which have been newly adopted by eight cities in Orange County, California – Costa Mesa, Fullerton, La Habra, La Palma, Los Alamitos, Mission Viejo, San Clemente, and Westminster – over the last five years (2012-2017).

It should be noted that the sample does not necessarily represent the average general plan in Orange County or in the state of California, although it includes a diverse group of localities in the county, as shown in Figure 2. It is not uncommon for cities not to update their plans for a long time. In addition, general plan updates often take place marginally or with a narrow focus on one or few elements. As a result, some municipalities' general plans are somewhat outdated and do not reflect the current issues or changing planning environments.

The selected plans may be biased in the sense that these eight cities put more efforts to make their plans current and inform stakeholders about their community visions, goals, and strategies. However, although this biasedness can make it difficult to generalize the findings from this project, the sample provides a valuable opportunity to understand what types of informational contents are currently provided through general plans mandated in California and how these contents are organized in each plan document. By focusing on these plans, it is also expected to identify various ways of using plan contents, when updated and newly adopted.

There is one thing to be noted before describing how the selected plans have been analyzed. Many cities in California have made contracts with urban planning, design, and/or engineering firms to get their assistance in creating or updating general plans, and some large firms have offered their services to multiple municipalities. Therefore, the project team has identified the major contractor for each of the sample plans and taken this factor into account in results interpretation.





City	FIPS	Year Incorporated	Type	Pop. in 2010	Pop. in 2000	Pop. Growth%, 2000-10	Med. HH Income in 2014	# of Planners in 2011	General Plan	Year of Plan Adoption
Costa Mesa	06-16532	1953	General Law	109,960	108,724	+1.1%	70,438	5	2015-2035 General Plan	2016
Fullerton	06-28000	1904	General Law	135,161	126,003	+7.3%	67,110	8	The Fullerton Plan	2012
La Habra	06-39290	1925	General Law	60,239	58,974	+2.1%	65,799	5	General Plan 2035	2014
La Palma	06-40256	1955	General Law	15,568	15,408	+1.0%	83,760	1	La Palma General Plan	2014
Los Alamitos	06-43224	1960	Charter	11,449	11,536	-0.8%	80,926	1	Los Alamitos General Plan	2015
Mission Viejo	06-48256	1988	General Law	93,305	93,102	+0.2%	104,886	4	Mission Viejo General Plan	2013
San Clemente	06-65084	1928	General Law	63,522	49,936	+27.2%	97,210	8	Centennial General Plan	2014
Westminster	06-84550	1957	General Law	89,701	88,207	+1.7%	55,287	8	Westminster General Plan	2016

Sources: Census 2000 and 2010; American Community Survey, 2012-16; California Annual Planning Survey, 2011 ; City websites

**Figure 2. Study areas: Eight municipalities in Orange County, California**

## Plan Content Analysis

The plan content analysis in this project has focused on two (required) elements of the selected general plans: circulation/transportation and land use elements. The two elements have been covered, primarily because “by statute [i.e., California Government Code §65302(b)(1)], the circulation element must correlate directly with the land use element.” (p.11, California Governor’s Office of Planning and Research, 2010). Another motive was to see how the informational contents and their structural characteristics differ across elements.

A preliminary review of the selected plans revealed some variation in plan organization. For instance, while a majority of the cities (seven out of the eight) presented each element in a separate section, the City of Fullerton employed a nonconventional format with a larger section in which circulation, land use, and some other aspects of built environments were addressed together. To be consistent, some parts of the Fullerton’s Built Environment section not directly relevant to either circulation or land use were excluded from the content analysis. For the same reason, plan information contained in each plan’s appendices or other sections have not been coded or analyzed, while consideration has been given to the presence of some appendices or supplementary sections in results interpretation.

Overall, our plan content analysis has been carried out through the following steps:

- Defining the unit of coding/analysis (sentences or equivalent plan segments)
- Developing coding schemes/procedures (see below for details)
- Pilot coding and scheme/procedure revision
- Plan content coding by two independent coders
- Reliability assessment (see Appendix 1) and analysis of the coded data

More specifically, the sentence-by-sentence coding and follow-up assessment/analysis have been conducted with a focus on three (potentially) important structural characteristics: composition, integration, and adaptability. For composition, to examine how various types of information were combined in each of the selected plans, the plan contents have been coded and analyzed based on the following classification scheme adopted from Berke and Godschalk (2009):

- Visions including issue identification and vision statements
- Goals including community values and desired conditions in the future
- Facts including information about existing conditions and forecasts
- Policies including detailed principles to guide decisions to achieve goals
- Implementation including timelines, responsibilities, and monitoring/evaluation details
- Others (remainders)

Regarding integration, this project has identified and analyzed plan content segments that address internal (connections with other elements of the general plan or other plans/initiatives in the city) and/or external relations (connections to other agencies and their actions). The



importance of these consistencies (or connections) in ensuring the quality of plans has been widely recognized (Berke and Godschalk, 2009). The goal here, however, is not to score each plan in this sense but to identify ways in which plans are integrated with other entities involved in the area using such internal and external consistency-related plan contents.

Examining the last characteristic of interest, adaptability, has turned out to be challenging not only because of difficulties in operationalizing the concept which has attracted much attention in the planning literature (see e.g., Alexander and Faludi, 1989; Savini et al., 2015) but because of the lack of exploration of alternative futures/scenarios in most general plans. Therefore, this project has analyzed how each plan dealt with (or responded to) new technologies and has tested the applicability of this approach with qualitative assessment of relevant plan contents.

## Plan Use Survey

Building on the plan content analysis, a plan use survey was developed to gather information about how informational contents of local general plans have been used by various user groups and what types/formats of plan information they are likely to find useful. As presented in Appendix 2, while sections 1 and 5 were included to collect general information about individual survey participants, sections 2 and 3 focused on the (perceived) usefulness and usability of general plans. More specifically, the following criteria were used to capture how each of the survey respondents appraised a certain plan (or plan element).

- It is comprehensive enough.
- It is well organized.
- It is visionary.
- It clearly explains what actions will be taken and when.
- It is relevant to my everyday life and/or work.

Furthermore, in section 4, the survey employed some exemplary plan contents (derived from the eight cities' general plans) and asked participants to evaluate the contents presented. By doing so, it attempted to capture potential uses of various plan contents as well as each respondent's preference. This approach, if successful, would enable us to gather useful information about plan use patterns, even from those who have limited awareness or knowledge about local (transportation) plans.

Upon receiving IRB approval (HS# 2018-4507), the survey was implemented through an online survey platform (QuestionPro). Given the project's focus on a sample of general plans recently adopted by eight cities in Orange County, an invitation email was sent out to the members of the Orange Section of the American Planning Association (i.e., local planners and other professionals who are likely to be familiar with these plans in the area) on August 30, 2018. About four weeks after the first invitation, a reminder was also sent to the same group on September 26, 2018, but all complete responses (summarized in the *Plan Use Survey Findings* section) were collected on or before September 28, 2018.

It should be noted that the plan use survey was conducted on a voluntary basis with the following inclusion criteria: Adults (age: 18 or older) who are willing to voluntarily participate in the survey AND are living or working in Orange County, California. No personally identifiable information has been requested through the survey.

## Plan Content Analysis Findings

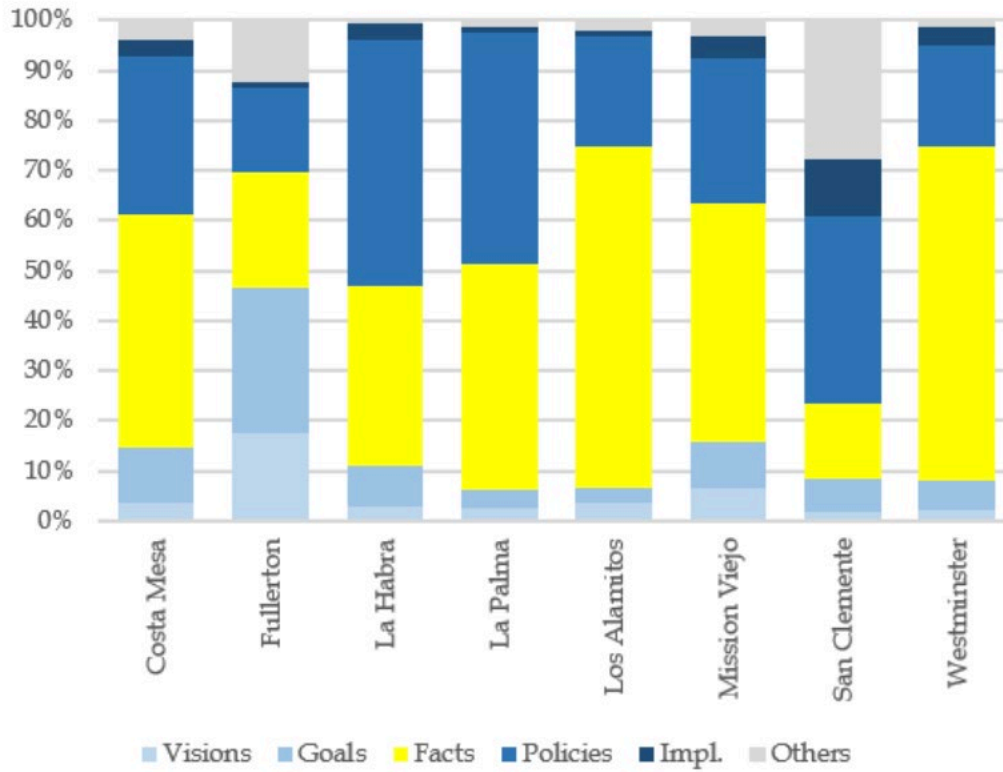
### Composition

While there is no perfect recipe for making plans, contemporary plans are expected to address a variety of subjects. According to Berke and Godschalk (2009), these subject may include “Issue identification and vision: Description of community needs, assets, trends, and future vision”, “Goals: Reflections of public values that express desired future ... development pattern”, “Fact base: Analysis of current and future conditions and explanation of reasoning”, “Policies: Specification of principles to guide public and private ... decisions to achieve goals”, and “Implementation: Commitments to carry out policy-driven actions ... [or] Monitoring and evaluation: Provisions for tracking change in community conditions” (p. 231).

Each plan analyzed in this project somehow covered all these subjects, including Visions, Goals, Facts, Policies, and Implementation. However, substantial variation in composition was detected from city to city, while the differences between circulation and land use elements were negligible in the sample (see Figure 3). Based upon these varying mixes of plan contents (and correlation patterns presented in the figure), one could differentiate more visionary or goal-oriented plans (e.g., Fullerton) from those putting greater emphasis on detailed policies and/or implementation strategies (e.g., La Habra, La Palma, and San Clemente). It would also be possible to derive a composite index that can represent varying levels of executability, given the hierarchical structure of plan content categories (Visions – Goals – Policies – Implementation) which was apparent in all of the general plans used in this project.

Although not meaningless, however, these (hierarchy-based) approaches neglect the importance of the Facts category that was found to account for the largest proportion of the plan contents and play a significant role in connecting other plan contents, putting them in perspective, and conveying messages in a more effective manner. When instead plans are categorized based upon the richness of factual information, the eight cities can be classified into the following three groups, showing a quite different picture:

- Group 1: Los Alamitos and Westminster
- Group 2: Costa Mesa, La Habra, La Palma, and Mission Viejo
- Group 3: Fullerton and San Clemente



Difference between circulation and land use elements

Element	Visions	Goals	Facts	Policies	Impl.	Others
Circulation	2.6%	7.3%	48.0%	32.0%	5.8%	4.5%
Land Use	3.6%	6.5%	47.4%	32.5%	3.2%	6.9%

Correlation patterns

	Visions	Goals	Facts	Policies	Impl.	Others
Visions	1.00					
Goals	0.94	1.00				
Facts	-0.35	-0.51	1.00			
Policies	-0.54	-0.44	-0.32	1.00		
Impl.	-0.40	-0.23	-0.49	0.23	1.00	
Others	0.14	0.26	-0.77	-0.03	0.76	1.00

**Figure 3. Plan composition patterns**

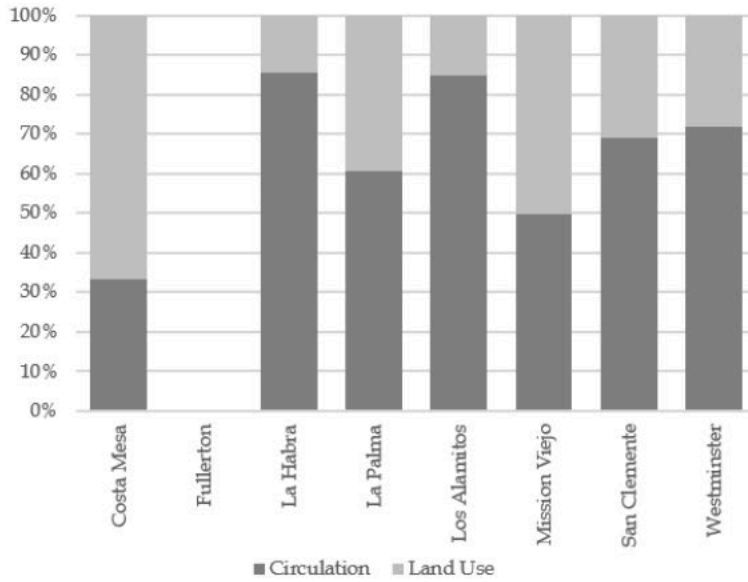
This does not necessarily mean that the more factual information, the better. Some plan users may find factually rich plans (Los Alamitos and Westminster) less efficient or too narrative in form, while others can find them extremely helpful in understanding the current conditions of the area and reasoning behind proposed actions. They may prefer plans with a minimal amount of facts (Fullerton and San Clemente) in which goals, policies, and implementation approaches stand out more clearly. Other plans that fall in between (Costa Mesa, La Habra, La Palma, and Mission Viejo) can also be preferred, as they provide various types of informational contents in a more balanced and structured manner.

It is interesting to find that the two most rapidly growing cities in the sample – Fullerton and San Clemente – were grouped together in this sense (Group 3), even though a clear understanding of such relationships requires further investigation beyond the scope of this project. It should be stressed, however, that the distinct patterns of plan composition (captured either based on the hierarchy of executability mentioned above or the richness of factual contents) do not seem to be easily attributable to one or few city characteristics. It also appears that having the same contractor does not lead to a similar pattern of plan composition, suggesting that general plans tend to be formulated not through a standardized process but rather through a much more dynamic course of deliberation and collaboration.

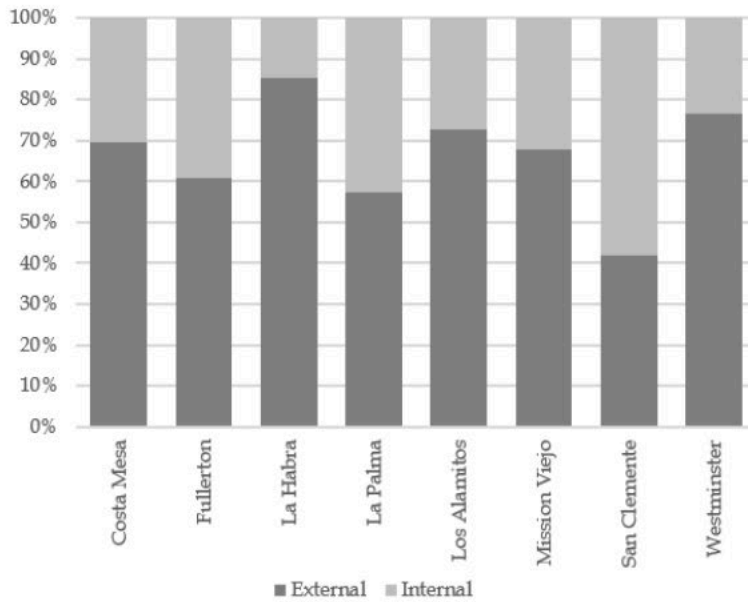
## Integration

Each plan content matters, but only when weaved together with other segments of the plan in a coherent fashion. Likewise, plans do not work independently of each other. As Hopkins and Knaap (2018) clearly pointed out, “[p]lans are made and used by many autonomous agents, a variety of organizations pursuing their interests while recognizing interdependence with the activities of other agents.” (p. 274). For this reason, integration of plans (or plan elements) is extremely crucial, even though interactions for integration or cooperation can take place not only through formal plan documents but also through everyday planning activities.

As explained earlier, in this project, the plan integration has been examined with a focus on plan segments that address internal and/or external consistencies (or connections), and Figure 4 provides a comparison of the plans with respect to this important structural characteristic. In a majority of cities, circulation elements were found to address consistencies more frequently than land use elements. This difference could be attributed to the unique nature of transportation investment/planning which requires systematic coordination with other municipalities and/or upper-level government units. In fact, all circulation elements in the sample addressed their connections with other entities/plans (i.e., external consistency) more frequently than their interactions with other elements of the general plans or other plans/policies/initiatives in the city (i.e., internal consistency), while land use elements did not exhibit such a pattern clearly.



Distribution by element



Distribution by type

**Figure 4. Distribution of consistency-related plan contents**

The characteristics of consistency-related plan content segments also varied across cities (see Figure 4). For instance, the City of San Clemente was relatively more inclined to internal consistency issues, compared to other cities considered, such as La Habra and Westminster, located in the northern part of the county and geographically boxed-in (i.e., surrounded by many other incorporated places as discussed in Kim et al. (2018) – see Figure 2). This finding may suggest that geographical settings (or each city’s spatial position in relation to other jurisdictions)

can significantly shape the way it deals with internal/external consistencies. But, again, further research is needed to test this hypothesis.

The City of Mission Viejo was also unique in that its circulation and land use elements addressed both internal and external consistencies in a more balanced manner. This point is well illustrated in Figure 5, which was generated using Gephi (Bastian et al., 2009), to obtain a more nuanced understanding of the inter-city variation with respect to plan integration, through thematic classification and keyword-pair identification of each city's consistency-related plan contents. Mission Viejo's general plan showed a more dispersed pattern of the network highlighting the wide breadth of its consistency-related plan contents, compared to La Palma showing a higher degree of concentration with a smaller number of key nodes.

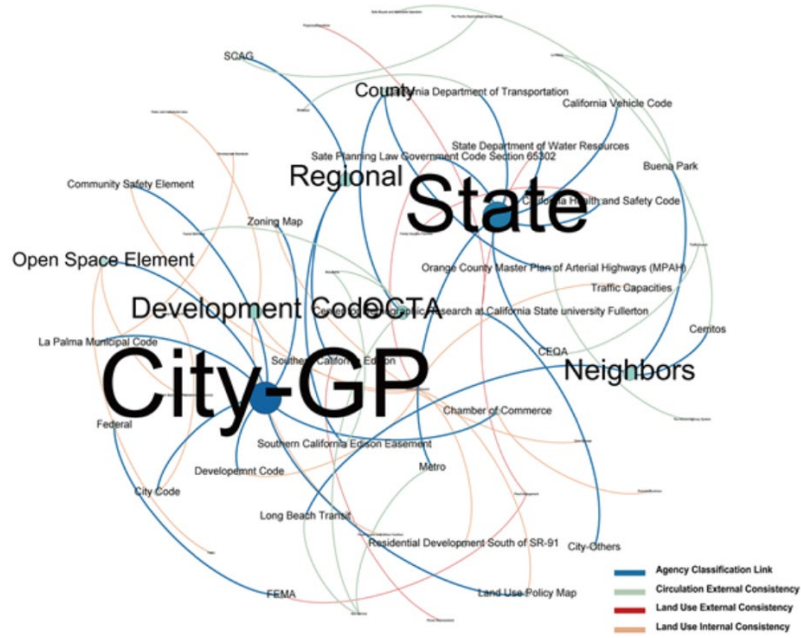
### **Adaptability**

Little evidence was found for adaptability. The sample plans did not appear to pay explicit attention to alternative futures/scenarios or spontaneous nature of urban development processes within their circulation or land use element.<sup>1</sup> The importance of adaptability was alluded to in some vision/issue statements and few other types of contents, but not elaborated sufficiently. Plan users may respond to this lack of flexibility either positively or negatively depending on their preference and purposes.

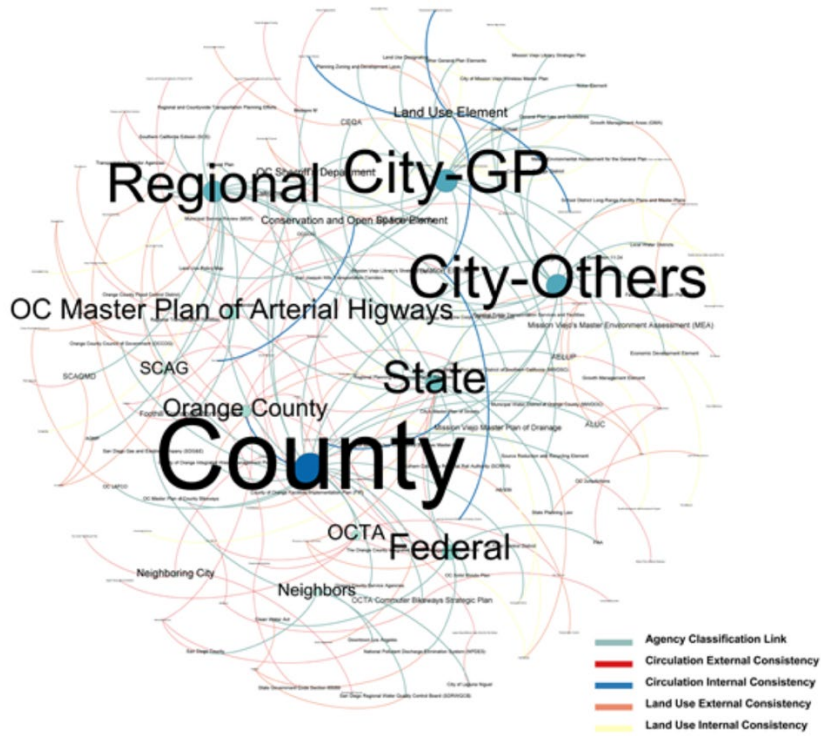
This finding of general plans can be contrasted with environmental impact reports (EIR) that should be prepared for many development projects under the California Environmental Quality Act (CEQA) in the state, with explicit consideration of "a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project" (CEQA Guidelines §15126.6). In other words, alternatives have typically been considered at the project level, mostly in the implementation stage, outside of the general plan documents. While vision statements were likely to be comprehensive to cover multiple issues and some associated tradeoffs, most other parts of the general plans tended to sustain and concretize the established visions without full recognition of intrinsic uncertainties and alternative futures.

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<sup>1</sup> Adaptability could be better captured in the plan amendment process rather than the plan itself.



La Palma's Consistency-related plan contents



Mission Viejo's consistency-related plan contents

Figure 5. Inter-city differences: La Palma vs. Mission Viejo

An approach tested in this project was to identify and analyze the plan contents that addressed new or emerging technologies explicitly. While this approach enabled us to identify several themes/keywords covered in multiple plans, such as ICT, intelligent transportation systems, green building technologies, and to detect some differences between circulation and land use elements, it seems to have limited usefulness in measuring varying degrees of adaptability across plans in the sample. These subjects were often covered superficially in the plans maybe due to difficulties in projecting the trajectory of technological advancement and uncertain market response in the future (Guerra, 2016). Little in-depth exploration or discussion was provided of how emerging technologies will reshape the city, who is likely to gain and who is likely to lose, or in what ways the city should respond to the new environment. In fact, most of the plans were silent about such contentious issues.

## Plan Use Survey Findings

It is challenging to gather information about how plan contents are actually used, in part because general plans are often not utilized as widely as we hope. The online survey yielded a low response rate, limiting our ability to assess city-specific (or user-specific) plan use patterns. Only 38 participated in the survey, and 23 (approximately 60%) provided answers for the entire set of survey questionnaires. A majority of the complete responses were from those who identified themselves as a planner (in either public or private sectors) with a master's degree or higher educational attainment level, while the respondents are balanced across gender and age groups.

The low response rate may indicate limited use of plans in the field. The complete responses, however, are quite positive about the usefulness of general plans. For 'please evaluate the usefulness of the contents of the city's general plan', nearly 90% responded 'moderately useful' (50%) or 'very useful' (39%).<sup>2</sup> For the usability of the plans, 46% of the responses indicated that the plan was 'very easy to understand and to use', while 43% selected 'it's understandable but cumbersome to use'. Other categories, including negative ones such as 'it's unnecessarily complex but still usable' and 'it's too complicated to use', only accounted for 11% of the total valid answers.

The survey responses, however, were not equally positive for all detailed evaluation criteria. As shown in Figure 6 (top), 'it is well organized' showed the highest level of agreement (89% – 'agree' and 'strongly agree' combined), followed by 'it is comprehensive enough' (86%) and 'it is visionary' (71%). Relatively lower levels of agreement were obtained for the other two statements about the general plans: 'it clearly explains what actions will be taken and when' (64%) and 'it is relevant to my everyday life and/or work' (55%). This finding may suggest that additional effort is needed to make plans more concrete and relevant, while the importance of visionary attributes in general plans should not be underestimated.

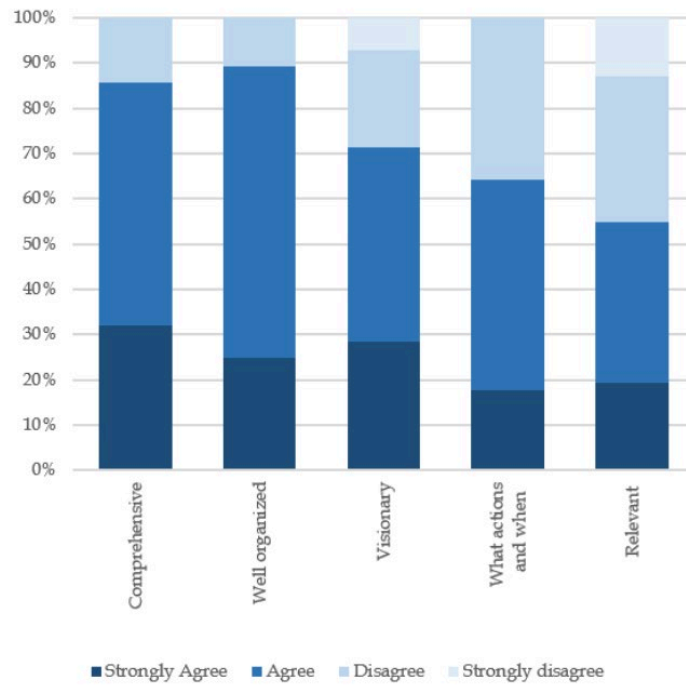
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<sup>2</sup> Survey participants were allowed to share their evaluations of the general plans of up to two cities: (i) their city of residence and (ii) an additional city from the sample, if they are familiar with that municipality's general plan. The percentages presented in this section reflect all valid responses, including those for the second cities.

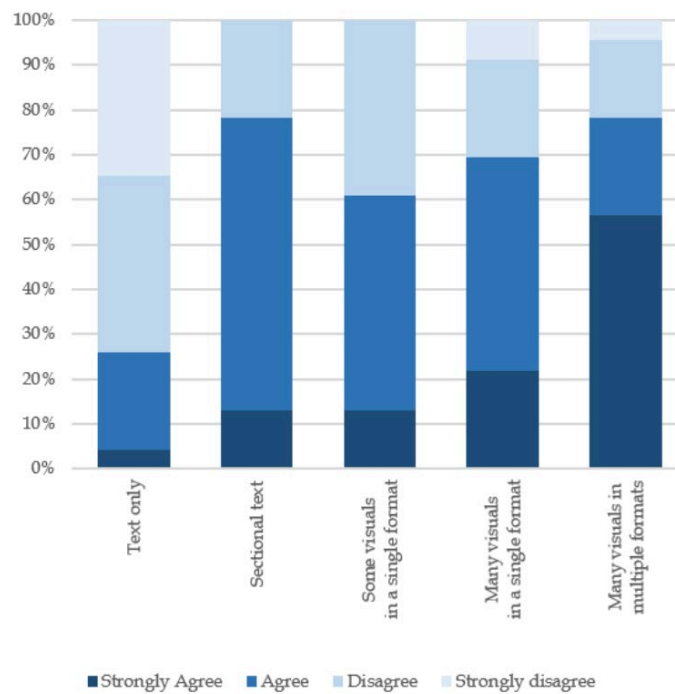


Regarding the format of plans, a majority stated that they would like to read and use a plan document with 'many visuals in multiple formats'. The survey respondents were also favorable for some alternative formats, such as 'sectional text', 'some visuals in a single format', and 'many visuals in a single format'. The 'text only' format, however, received a significantly lower level of support (see Figure 6, bottom).

Finally, it is important to note that some respondents reported that they used general plans not for their professional duties but for other (non-conventional) purposes. These include curiosity, education, and even for checking 'land use when buying a house', suggesting that plan contents could be used more broadly for a variety of decision-making processes and that more attention needs to be paid to various needs/perspectives of diverse (potential) plan user groups.



Agreement distribution by criteria



Preference distribution by type

Figure 6. Survey results

## Summary and Discussion

As noted above, while a large amount of effort has been devoted to making and updating local transportation plans, surprisingly little is known about how these plans are made and used for various purposes. This project aims to fill this significant gap in the transportation planning literature and practice mainly through a plan content analysis and plan use survey. While it focuses on a sample of the general plans recently adopted by eight municipalities in Orange County, California, it is hoped that the project findings can provide some useful insights into the nature of current plan making/using processes and contribute to transportation planning and other engagement activities conducted by many planning agencies in the state and beyond.

In the plan content analysis, emphasis was placed on the importance of systematic integration of plans (between agencies and topics) needed to promote wider use of plan information and guide urban/regional development in a cooperative fashion, as well as diverse ways to compose plans to convey various types of informational contents. Special attention was also paid to another (potentially) important structural characteristic of plans, adaptability.

Even though this project focused on plans (as opposed to processes), it neither tried to evaluate their quality from a single perspective nor examined whether they were physically implemented or not. Instead, we viewed plans as an important channel of signaling and information provision that can benefit a broader group of (potential) plan users with varying preferences and information needs.

The exploratory nature of this project, combined with its narrow focus on a small number of cities in a single county, may limit the generalizability of this work. It is worth noting, however, we found substantial variation in the way cities compose their plans and integrate them with other plans/players, while the sample showed limited flexibility in addressing alternative futures or spontaneous features of urban development processes. Furthermore, local plan characteristics seemed to be shaped not only by the subject matter (transportation vs. land use) but also by the spatio-temporal setting (revealed in terms of growth rate, geographical position, and other variables) in which each city was situated. Future research linking these plan characteristics to plan use behaviors (or the perceived value of plans) would be of great value.

Although not very successful in collecting a large number of responses, our plan use survey suggested that general plans could be used not only by government agencies but also by other stakeholders for various decision-making processes. Generally, the current plans appeared to be useful (well organized, visionary, and comprehensive), but plan users could find the plans more valuable if the relevance of these plans to their everyday life and/or work was elaborated in detail. It was also found that the presentation/visualization methods would make a difference in promoting wider use of transportation plans.

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# Data Management Plan

## Products of Research

We used a sample of general plans (adopted by the following eight municipalities in Orange County, California: Costa Mesa, Fullerton, La Habra, La Palma, Los Alamitos, Mission Viejo, San Clemente, and Westminster) and survey data collected from planners and other individuals in the area.

## Data Format and Content

The plans are in pdf format, and the survey data are in excel format.

## Data Access and Sharing

The general plans analyzed in the project are available at:

- <https://www.costamesaca.gov/city-hall/city-departments/development-services/planning/general-plan>
- [https://www.cityoffullerton.com/gov/departments/dev\\_serv/general\\_plan\\_update/default.asp](https://www.cityoffullerton.com/gov/departments/dev_serv/general_plan_update/default.asp)
- <https://www.lahabracity.com/320/General-Plan-2035>
- <https://www.cityoflapalma.org/123/General-Plan>
- <https://cityoflosalamitos.org/2035-general-plan/>
- <https://cityofmissionviejo.org/departments/community-development/planning/general-plan>
- <https://www.san-clemente.org/department-services/planning-services/general-plan>
- [https://www.westminster-ca.gov/our\\_city/depts/cd/planning/general\\_plan/default.asp](https://www.westminster-ca.gov/our_city/depts/cd/planning/general_plan/default.asp)

## Reuse and Redistribution

Users will need to contact the project investigator for the survey data (aggregated) and get permission to reuse the dataset. Each municipality's general plan is publicly available on the city's website listed above.

## Appendix 1. Reliability Assessment

The importance of achieving a satisfactory level of reliability and disclosing relevant information has been widely acknowledged (see e.g., Marston and Shrives, 1991; Milne and Adler, 1999; Beattie et al., 2004). As summarized by Beattie et al., (2004), “[t]hree types of reliability can be identified: stability (the extent to which the same coder is consistent over time when coding the same content); reproducibility or inter-coder reliability (the extent to which different coders produce the same results when coding the same content); and accuracy (the extent to which the classification of text corresponds to a standard or norm) (Krippendorff, 1980, pp. 130–132). Since stability is a weak measure of reliability and standard codings seldom exist, the most frequently reported measure is inter-rater reliability.” (p. 214). This project used the well-known coefficient of agreement (between two independent plan coders) to assess the reliability of the content analysis, as done by many other studies. The overall level of agreement was 87.8% (weighted average), which is satisfactory given the cut-off levels in the literature ranging from 70% to 80%. There was no big difference between circulation (88.0%) and land use (88.4%) elements, when calculated after excluding the Fullerton plan that addressed circulation and land use together in an integrated built environment section and showed a relatively lower level of agreement, while a noticeable variation was found across cities.<sup>3</sup>

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<sup>3</sup> If calculated by including non-textual contents (e.g., maps and other figures) in the plans, the levels of agreement tended to be higher than the percentages reported in this table. A more aggregated classification scheme was also found to result in a higher level of agreement.



## Appendix 2. Survey Questionnaires

### INTRODUCTION

This online survey is designed to better understand how informational (both factual and visionary) contents of local general plans have been used by various user groups and what types/formats of plan information they are likely to find useful. You are eligible to participate in this survey if you are at least 18 years of age or older AND are living or working in Orange County, California. The survey should take approximately 10-15 minutes to complete and can be done from any electronic device with internet access. Your participation is entirely voluntary. No personally-identifiable information will be collected. We thank you for your time and appreciate your willingness to help us with this research effort.

If you have any questions about this survey, please feel free to contact the Lead Researcher, Jae Hong Kim (Associate Professor, Department of Urban Planning and Public Policy, University of California, Irvine) at [jaehk6@uci.edu](mailto:jaehk6@uci.edu). The Study Information Sheet is available at this [Link](#).

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### ONLINE CONSENT

By selecting I Agree below, you consent that (i) you are eligible by being at least 18 years of age or older, (ii) you are living or working in Orange County, California, and (iii) you are willing to take this online survey. If you are either ineligible or unwilling to take the survey, please exit the survey.

- I Agree
- Exit

---

### SURVEY QUESTIONNAIRE – SECTION 1/5

What is your city of residence?

- Costa Mesa
- Fullerton
- La Habra
- La Palma
- Los Alamitos
- Mission Viejo
- San Clemente
- Westminster
- Other \_\_\_\_\_

Have you ever seen or used your city's general plan or that of another city in Orange County, California?

- Yes
- No [**Skip to Section 4**]

Are you employed or self-employed as a planner?

- Yes
- No [**Skip to Section 2**]

For how many years have you worked as a planner? \_\_\_\_\_

Which of the following best describes your employer?

- City government
  - Other public agency
  - Private sector
  - NGO or non-profit
  - Self-employed
  - Other \_\_\_\_\_
- 

## SURVEY QUESTIONNAIRE – SECTION 2/5

For how many years have you lived in your city? \_\_\_\_\_

Have you seen or used your city's general plan? (Please check all that apply)

- Never [**Skip to Section 3**]
- Yes, for my professional duties.
- Yes, for my investment decision making.
- Yes, for other reasons (please specify) \_\_\_\_\_

Please evaluate the usability of your city's general plan.

- It's very easy to understand and to use
- It's understandable but cumbersome to use
- It's unnecessarily complex but still usable
- It's too complicated to use
- Other \_\_\_\_\_

Please evaluate the usefulness of the contents of your city's general plan.

- Not at all useful
- Slightly useful
- Moderately useful
- Very useful
- Other \_\_\_\_\_

Please indicate your level of agreement with each of the following statements about your city's general plan: (4: Strongly agree, 3: Agree, 2: Disagree, 1: Strongly disagree)

- It is comprehensive enough.
- It is well organized.
- It is visionary.
- It clearly explains what actions will be taken and when.
- It is relevant to my everyday life and/or work.

In answering the above questions, did you focus on a specific element of the general plan?

- No
  - Yes, Conservation
  - Yes, Housing
  - Yes, Land Use
  - Yes, Noise
  - Yes, Open Space
  - Yes, Safety
  - Yes, Transportation
  - Yes, Other \_\_\_\_\_
- 

### SURVEY QUESTIONNAIRE – SECTION 3/5

Have you seen or used any other city's general plan, listed below? If so, which one are you most familiar with?

- No **[Skip to Section 4]**
- Costa Mesa
- Fullerton
- La Habra
- La Palma
- Los Alamitos
- Mission Viejo
- San Clemente
- Westminster

Have you lived in the city?

- Yes
- No

Have you worked in the city?

- Yes
- No

Please evaluate the usability of the city's general plan.

- It's very easy to understand and to use
- It's understandable but cumbersome to use
- It's unnecessarily complex but still usable
- It's too complicated to use
- Other \_\_\_\_\_

Please evaluate the usefulness of the contents of the city's general plan.

- Not at all useful
- Slightly useful
- Moderately useful
- Very useful
- Other \_\_\_\_\_

Please indicate your level of agreement with each of the following statements about the city's general plan: (4: Strongly agree, 3: Agree, 2: Disagree, 1: Strongly disagree)

- It is comprehensive enough.
- It is well organized.
- It is visionary.
- It clearly explains what actions will be taken and when.
- It is relevant to my everyday life and/or work.

In answering the above questions, did you focus on a specific element of the general plan?

- No
  - Yes, Conservation
  - Yes, Housing
  - Yes, Land Use
  - Yes, Noise
  - Yes, Open Space
  - Yes, Safety
  - Yes, Transportation
  - Yes, Other \_\_\_\_\_
-

## SURVEY QUESTIONNAIRE – SECTION 4/5

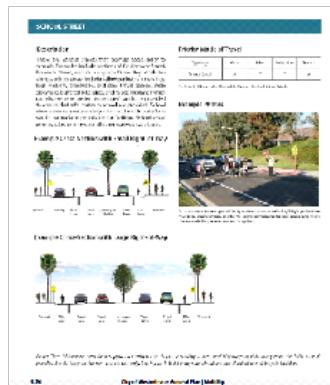
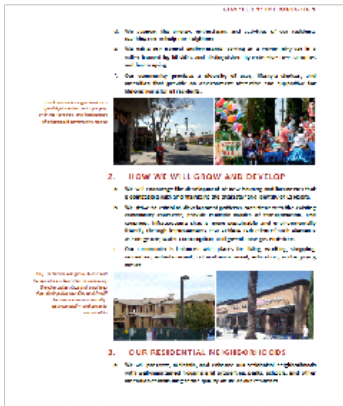
Please indicate your level of agreement with each of the following statements: (4: Strongly agree, 3: Agree, 2: Disagree, 1: Strongly disagree)

I would like to read and use a plan document with:

- Text only
- Sectional text
- Some visuals in a single format



- Many visuals in a single format
- Many visuals in multiple formats



Please read the sample plan contents drawn from a city’s general plan below and indicate your level of agreement with each of the following statements: (4: Strongly agree, 3: Agree, 2: Disagree, 1: Strongly disagree)

Sample 1: “the City aspires to keep [it] eclectic community with welcoming public spaces; attractive, walkable residential neighborhoods; exceptional parks and community services; and, a diverse economy that meets the needs of local residents while also attracting investment from regional and international markets.”

- The vocabulary is easy to understand.
- The statement is informative.
- It is essential for guiding the future development of a city.

Sample 2: “Strongly encourage the development of residential uses and owner-occupied housing (single-family residences, condos, townhouses) where feasible to improve the balance between rental and ownership housing opportunities”

- The vocabulary is easy to understand.
- The statement is informative.
- It is essential for guiding the future development of a city.

Sample 3: “As residential development occurred, construction on these narrow, deep lots often took the form of subdivisions usually consisting of a row of detached or attached residential units on one side of the parcel and the driveway access for the residential units on the opposite side.”

- The vocabulary is easy to understand.
  - The statement is informative.
  - It is essential for guiding the future development of a city.
- 

#### SURVEY QUESTIONNAIRE – SECTION 5/5

How do you identify your gender?

- Decline to answer
- Female
- Male
- Self-identify \_\_\_\_\_

What is your age? \_\_\_\_\_

Are you of Hispanic or Spanish family background?

- Decline to answer
- Yes
- No

How would you describe your race?

- Decline to answer
- American Indian or Alaskan native
- Asian or Pacific Islander
- Black or African American
- White
- Other \_\_\_\_\_

What is the highest level of education you have completed?

- Decline to answer
  - Less than high school
  - High school diploma
  - Some college credit, no degree
  - Associate's degree
  - Bachelor's degree
  - Master's degree or above
  - Other \_\_\_\_\_
- 

### CLOSING

Thank you for your response to this survey. Your answers have been submitted.