

# **NCHRP 20-129: Guide for Addressing Encampments on State Transportation Rights-of-Way**

## **Interim Deliverable**

Prepared for

### **NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM (NCHRP) TRANSPORTATION RESEARCH BOARD**

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# Chapter 1: Interim Report Introduction

## 1. Introduction

The objective of this research project is to develop a guide of suggested practices for responding to, managing, and deterring encampments on the right-of-way (ROW). The suggested practices will address the challenges for state departments of transportation (DOTs) in the design, construction, and maintenance of pavements and consider social equity, environmental impacts, safety, legal issues, coordination with other agencies, and other relevant issues. The project activities will lead a guide that will have nationwide applicability and will serve as a resource for state DOTs in implementing management practices that will reduce the challenges associated with encampments.

In this interim report, we describe our Phase 1 work, including documenting the research approach; present findings and analysis from the literature review, industry scan, and two surveys; identifying existing and new practices; and, present the proposed Phase 2 work plan and a working outline of the guide.

## 2. Background

More than 650,000 people in America experience homelessness every day (U.S. HUD, 2023). The limited availability of affordable housing in major metropolitan areas has forced many to look for shelter in state transportation locations, including freeway right-of-way, underpasses, rest areas, parking lots, and state highways, leaving departments of transportation to respond to a crisis well beyond their portfolio of work. The pandemic created an even more tenuous situation for unhoused people because of its health, safety, and economic implications. State and local governments, at the behest of Centers for Disease Control and Prevention and with federal pandemic stimulus funds, implemented new policies to support unhoused populations. Between the availability of old and new practices for people experiencing homelessness and the looming threat of increased evictions, understanding how state DOTs address encampments is now more critical than ever. Their response is critical for the welfare of people experiencing homelessness but also for ensuring a safe, operational road network.

Homelessness is not new. While the pathways into homelessness are multiple and reflect a confluence of societal failures, the major driver of homelessness is housing cost. People who have experienced homelessness often point to an individual challenge that occurred that led them into homelessness such as job loss, chronic illness, felony conviction, racism, or sexual orientation. The individual situations, though, really reflect what happened to prevent someone from paying rent or accessing housing. Put into a systems framework, homelessness is what happens when housing, healthcare, economic conditions, criminal justice, education, and transportation systems fail to serve people in need. Systemic oppression based on race, gender, and class factor into a persons' likelihood of becoming homeless, and how long they may stay homeless. For instance, Black Americans are only 14 percent of the total U.S.

population but represent 37 percent of the homeless population (U.S. Census Bureau, 2023; U.S. HUD, 2023).

After years of reductions in the number of people experiencing homelessness, their numbers have trended up since 2016. While the overall share of unhoused individuals in the U.S. has been relatively consistent (about 0.2 percent of the total population), the number of people experiencing unsheltered homelessness has increased. In 2023, of the people experiencing homelessness, about 39 percent lived unsheltered, while the rest lived in emergency shelters or transitional housing (U.S HUD, 2023). Between 2016 and 2023, unsheltered homelessness rose by 46 percent nationally, and skyrocketed in places like California, which is home to almost half of all unsheltered people in the country, and Oregon—the very places our researchers are located. Growth of unsheltered populations means that even more people sleep on sidewalks, in tents, or in cars along transportation corridors and right-of-way. This has a significant impact on personal safety (Badger, Blatt, and Katz, 2023): in Portland, Oregon, 70 percent of pedestrians killed in traffic crashes in 2021 were experiencing homelessness at the time, including some living on state DOT right-of-way (Portland Bureau of Transportation, 2022); in Austin, Texas, 80 percent of pedestrian deaths in the I-35 corridor from 2017 to 2019 were people experiencing homelessness (Arellano and Wagner, 2024).

Homelessness in DOT ROW—and effective responses to it—have received little comprehensive study to date. In 2013, 70 percent of surveyed DOT staff reported that they or others in their agencies had encountered homelessness, and 40 percent characterized homelessness as an operational challenge for their agency (Bassett, Tremoulet, and Moe, 2013). Studies have examined employee safety issues and damage to equipment and infrastructure related to encampments (Ricord, 2020). Scholars find that living close to freeways is dangerous for people experiencing homelessness, most notably in terms of pedestrian crashes (Bernhardt and Kockelman, 2021). Specific issues pertaining to the challenges for state DOTs in the design, construction, and maintenance of pavements is a topic that has not surfaced in previous studies.

In the existing studies of DOT responses to homelessness, DOTs often adopt preventive maintenance or “defensive design” to prevent camps from forming or re-forming, such as adding fences and walls or removing cover (Ricord, 2020). Studies of DOT responses highlight partnerships with law enforcement, social services, and local governments (Potier-Brown and Pipkin, 2005; Tremoulet, Bassett, and Moe, 2012; and Ricord, 2020). Indeed, DOTs often adopt a multi-agency approach to clean up or clear encampments (Ricord, 2020). Bassett et al. (2013) found that the DOT approaches relying on law enforcement alone tend to only temporarily remove individuals experiencing homelessness, while strategies with more long-term success rely on partnerships with social services agencies as well. Tremoulet et al. (2012) note that simply moving individuals experiencing homelessness from one place to another is costly, does not address the root cause of homelessness, and can worsen relationships with unhoused individuals and advocates. However, front-line staff need support in dealing with homeless individuals and encampments, and agencies need skills, knowledge, and flexibility to devise strategies that address the various situations they may encounter. Less is known about other

DOT strategies and actions related to homelessness, particularly as they relate to design, construction, and maintenance practices. This study fills that gap.

### 3. Overview of Tasks as stated in SOW

#### PHASE I

**Task 1.** Collect and review relevant domestic and foreign literature, research findings, and information relative to responding to, managing, and deterring encampments on the ROWs. This information may be obtained from published and unpublished information, and contacts with public and private organizations.

**Task 2.** Based on the review performed in Task 1, identify new and existing practices recommended for further consideration/investigation in Phase II.

*Note: The process used for evaluating the identified practices, and for identifying those recommended for further consideration and investigation must be described in detail.*

**Task 3.** Based on the evaluation performed in Task 2, prepare an updated, detailed work plan to be executed in Phase II that includes an approach for developing the guide of suggested practices.

*Note: The work plan must provide detail of the work proposed in Phase II for developing the guide of suggested practices, and include an outline of the proposed guide. The work proposed for Task 5 must be divided into subtasks, and the work proposed in each subtask must be described in detail.*

**Task 4.** Prepare an interim report that documents the research performed in Tasks 1 through 3. Following review of the interim report by the NCHRP, the research team will be required to make a presentation to the NCHRP project panel. Work on Phase II of the project will not begin until the interim report is approved and the Phase II work plan is authorized by the NCHRP. The decision on proceeding with Phase II will be based on the contractor's documented justification of the updated work plan.

*Note: The contractor shall submit the Phase I interim report within 7 months from contract award and meet with NCHRP within 2 months of report submission. The meeting is expected to be in-person and held in Washington, DC.*

#### PHASE II (will be considered after completion of Phase I):

**Task 5.** Execute the Phase II plan approved in Task 4. Based on the results of this work, prepare the guide.

**Task 6.** Prepare material, in a PowerPoint or other format, for use in webinars and presentations to facilitate implementation and use of the developed guide.

**Task 7.** Prepare a final deliverable that documents the entire research effort. The deliverable shall include (1) a research report documenting the work performed in the project and used to

develop the guide, (2) the guide, and (3) an implementation plan. The guide shall be prepared as a stand-alone document.

*Note: Following receipt of the draft final deliverable, the remaining 3 months shall be for NCHRP review and comment and for research agency preparation of the final deliverable.*

## 4. Report Overview

This interim report (Task 4) is divided into 7 chapters, with this introductory chapter serving as the first. Chapters 2-4 present the findings for Task 1 (literature review, industry scan, and surveys). Chapter 5 includes the identified new and existing practices (Task 2). Chapter six includes the detailed work plan proposed for Phase 2. There is a brief conclusion that follows.



# Chapter 2: Task 1A - Academic and Gray Literature Review

## 1. Introduction

In this chapter, we review literature on the intersections between homelessness, encampments, and transportation, especially literature related to state department of transportation rights-of-way and operations, including aspects related to design, construction and maintenance of pavements and bridges. We synthesize findings from academic studies and gray literature, emphasizing the new and existing practices and characterizing the current state of practice throughout.

### *Method*

We searched through databases, including TRID, TRB Publications Index, ScienceDirect, PubMed, and Google Scholar. TRID, the integrated database that includes TRB's Transportation Research Information Services (TRIS) and International Transport Research Documentation (ITRD) databases, includes, in addition to traditional peer-reviewed research, research in progress and research projects sponsored by USDOT, state DOTs, and university transportation centers, as well as conference proceedings that are not included in other databases.

Appendix A provides a table of select key studies found from this search related to state DOTs and homelessness, in greater detail. The entry for each resource includes bibliographical information, a short description, and notes about applicability to the NCHRP 20-129 project.

We are organizing all studies and resources in Zotero, a reference management software. As we continue to review resources, we will compile content from each resource that may prove useful to include in the guide.

### *Categorization of the Research*

We group the existing literature into three broad categories. First, reports and studies describe the scope and contours of homelessness on DOT land—who shelters there, when, in what particular types of places, and why—and operational, safety, legal, and humanitarian issues this causes for DOTs, their partners, and unhoused people themselves. Second, we found work on responses to homelessness and encampments on DOT property. These studies include comparative overviews of the types of strategies DOTs use (“push” and “pull”, partnerships, design and construction standards, etc.), as well as some profiles of particular initiatives (We profile new and emerging homelessness response strategies found from our original research in Chapter 3.). Lastly, we look beyond DOTs to find lessons from the literature on how other public agencies and realms are responding to homelessness, including Crime Prevention through Environmental Design strategies.

Before delving into these groups of findings, though, we place homelessness on DOT land in context below.

### *Overview of Homelessness on DOT Property*

Homelessness is a “messy problem”—a term of art in decision theory referring to an issue with compounding causes and spillover effects that touch many areas. There is no obvious answer for a “messy problem,” and it requires judgment to address, especially as different stakeholders with sometimes conflicting aims are involved (Paradice, 2008). As described below, homelessness on DOT lands is such a problem, with a variety of interests at play, without a perfect response, and ultimately as a result of factors beyond DOTs’ control.

As unsheltered homelessness has increased nationally, more public entities are contending with people living on or visiting property not intended for human habitation. or the desired use. Many of the issues raised in the literature focus on individuals using public lands and spaces to sleep and rest or for hygiene purposes. Because these are public spaces, agencies that own or manage them determine what are allowable and what are unacceptable activities, such as using the space for intended activities versus what might be deemed loitering, civil disturbance, illegal activities, and abusive behavior towards others (Marek and Sawicki, 2017; Frankel, Katovich, and Vedvig, 2016; Bauman et al., 2014; and Municipal Research and Services Center, 2023). As one of the largest owners of public land in urban areas, DOTs are on the front line of non-housing agencies contending with the impact of a growing number of people without housing.

One of the major concerns for DOTs is that of unauthorized permanent or semi-permanent camping (encampments) on DOT property, such as shoulders or adjacent road rights-of-way; medians; highway/freeway interchanges and ramps; bridges, tunnels, and underpasses; DOT facilities, storage areas, buildings, and parking lots; parking areas near roadways; rest stops; culverts or drainage areas; DOT-owned woods, streambeds, parks, and other natural areas; and paths and sidewalks. In other words, camps are often located on DOT property or on land adjacent to DOT property. These “unauthorized encampments” refer to people living in tents or self-made structures or sleeping on concrete in areas where camping is not allowed (Rebecca Cohen, Yetvin, and Khadduri, 2019). There may be one tent, or a few sites spread out; in other places there might be multiple structures near one another where people interact or even run their own community governance.

People experiencing homelessness take shelter on DOT property for a variety of reasons. DOT spaces such as underpasses offer shelter from the elements. Some DOT properties are in areas not likely to draw unwanted attention and lie distant from places where housed neighbors, businesses, and/or police might complain about unhoused people’s presence. Encampments that originally located on DOT property to avoid residential and business areas, may want to stay on the DOT land because they may become self-sustaining, as sheltering in groups and/or in established locations can foster community and a sense of security, autonomy, and stability (Junejo, 2016; Loukaitou-Sideris et al., 2023; and Wasserman et al., 2023).

Most DOTs approach unauthorized camping by clearing people or sites or secure areas of concern with fencing or other barriers. These removals or “sweeps” often end up requiring

additional resources, provide only temporary “fixes,” and ultimately are not effective in addressing the root causes of homelessness (Dunton et al., 2020). This chapter and Chapter 3 offer other strategies, from existing literature and our research, respectively.

## 2. Homelessness on DOT Land: Scope and Issues

### *Scope of Homelessness on DOT Property*

Researchers and policymakers do not have a firm idea of how many people take shelter on DOT property. Neither DOTs nor continua of care collect disaggregated homeless counts in these settings; we found no publicly available reports or studies that counted people taking shelter on DOT land in a given city or state at a given point in time (though there are studies with one-time counts or counts over time at particular sites) (Loukaitou-Sideris et al., 2023 and Wasserman et al., 2023). However, some data exist: Pittman et al. (2020) surveyed over 4,000 unhoused Minnesotans, and one third of them had spent at least one night at a highway rest area and/or on transit in the prior year. Surveys of agency staff have found that DOTs report people sheltering on their properties frequently: 20 out of 24 responding departments to the survey in NCHRP Legal Research Digest (LRD) 87 cited regular encampments (NASEM, 2022a).

As in other settings, the extent of homelessness on DOT land varies with the weather, season, climate, policies in place at the time, and built environment (Loukaitou-Sideris et al., 2023 and Wasserman et al., 2023). As for the last, while rural DOT rights-of-way may have fewer unsheltered people given their distance from social services and general population concentrations, NCHRP LRD 87 found a majority of responding agencies saw no difference in homelessness issues and responses between urban, suburban, and rural areas (NASEM, 2022a). The Coronavirus Disease 2019 (COVID-19) pandemic exacerbated perceived homelessness according to DOT staff (Loukaitou-Sideris et al., 2023 and Wasserman et al., 2023). Meanwhile, the characteristics of people who find shelter in transportation settings may differ from those who sleep in other places. Many camping at a rest area studied by Bassett et al. (2013) were advantaged compared to other unhoused people by having a car to sleep in and store belongings; they also sorted themselves into two chosen communities by age, stability, and substance abuse and mental health issues, each living in different sub-areas. However, in a number of studies, people experiencing homelessness in a comparable setting, public transit, were more likely than their peers elsewhere to be low-income, facing a mental illness, formerly incarcerated, men, Black, and, above all, chronically unhoused (Loukaitou-Sideris et al., 2021; Ding, Loukaitou-Sideris, and Wasserman, 2022; Wilder Research, 2019; and Nichols and Cázares, 2011).

### *Issues for DOTs Because of Encampments*

#### **Safety Issues**

There are safety issues for people experiencing homelessness, and there are also safety concerns for DOT staff and contractors. Living near freeways and DOT facilities is dangerous, both for unhoused individuals themselves and other road system users (Loukaitou-Sideris et al.,

2023 and Wasserman et al., 2023). In the short term, people experiencing homelessness risk being hit by vehicles, especially as they walk to and from encampments (Bernhardt and Kockelman 2021); in the long term, living near polluting highways increases health risks. Employees' safety can be put at risk as well. Encampments residents discard, and cleared encampments leave behind, hazardous refuse such as needles that may require specialized hazmat clean-up teams. DOTs sometimes work with law enforcement even on routing maintenance work to keep their staff protected in encampments (Loukaitou-Sideris et al., 2023 and Wasserman et al., 2023).

## **Infrastructure Damage**

Encampments can also cause environmental damage to woods, streams, etc., necessitating landscaping or erosion-control responses (Ricord, 2020; Loukaitou-Sideris et al., 2023; and Wasserman et al., 2023). Flammable debris and makeshift shelters are common. Encampment fires also pose a particular danger to individuals and infrastructure there and nearby, especially in areas where fires can grow and spread quickly. People creating makeshift shelters can cause equipment and infrastructure damage, traffic backups, and crashes. Along with DOTs, neighboring residents and businesses may also suffer from these consequences (Loukaitou-Sideris et al., 2023 and Wasserman et al., 2023).

## **Legal Issues**

The presence of encampments raises multiple legal issues. These issues can be grouped into two broad categories. The first includes laws and policies that DOTs must consider when removing encampments. NCHRP LRD 87, published in 2022, received 24 state DOT survey responses, finding three major issues raised: managing encampments and their residents, crime and safety, and legal and liability issues (NASEM, 2022a).

As for the last, cities and state agencies are—or see themselves—somewhat constrained in how they can approach encampments or just individual people sleeping or camping on transportation property. In 2018, the federal Ninth Circuit Court of Appeals found in favor of the plaintiffs in the case *Martin v. Boise* that municipalities cannot enforce blanket camping bans by citing or arresting individuals when there are not sufficient shelter beds for people experiencing homelessness. Doing so would constitute cruel and unusual punishment and violate the Eighth Amendment, the court concluded. The Supreme Court let the ruling stand in 2019. It only applies, though, to Western states in the Ninth Circuit (NASEM, 2022a; Letona, 2019; and *Harvard Law Review*, 2019); other parts of the country, such as Missouri, have banned camping or sleeping on any public land (Oladipo, 2023). The Supreme Court will soon consider a related case, *Grants Pass v. Johnson*, that will likely rule on this issue nationwide (Rachel Cohen, 2024).

Constitutional rights of equal protection, due process, travel, and assembly and against unreasonable search and seizure, as well as federal and state laws and orders, provide other guardrails and constraints, often as interpreted and tested in court cases. Encampment sweeps have faced legal challenges on these bases as violations of core constitutional rights of encampment residents (NASEM, 2022a).

DOTs also face legal restrictions on removal and disposal of personal property. During sweeps, removal of property can result in the loss of personal identification, needed to access services, and other personally meaningful items. Two federal court cases protect the personal property of people experiencing homelessness:

- In *Lavan v. Los Angeles* (2012), the Ninth Circuit determined that property could not be considered abandoned if its owner was temporarily separated from it (e.g., using a bathroom). The court also required that “meaningful notice” be provided before property is seized.
- In *Ellis v. Clark County Department of Corrections* (2016), the Western District of Washington State ruled that property seized during a forced relocation could not be immediately destroyed except in specific circumstances.

Both courts ruled that violating a no-camping ordinance did not justify taking someone’s property.

NCHRP LRD 87 documents the laws, statutes, cases, and policies addressing 1) a transportation agency’s prevention or removal of unsheltered encampments from transportation rights-of-way; 2) the authorized use of transportation rights-of-way for shelters for unhoused individuals and social services to assist transportation agencies in addressing safety, health, and public welfare issues; and 3) the ability of transportation agencies to control their rights-of-way (NASEM, 2022a). The digest includes a comprehensive overview of the types of legal claims against transportation agencies that involve use, prevention, or removal of encampments from transportation rights-of-way. Many states conduct removal operations without consistent and documented procedures, and with mixed results. For example, Oregon is one of a handful of states that has statutes directing the specific process for removal of property.

Responding to these legal issues is complicated. DOTs also face issues because of the patchwork of jurisdiction, land ownership, and easements in and around their lands. This can lead to confusion around responsibilities and to encampments shuffling between nearby properties of different public agencies (NASEM, 2022a; Loukaitou-Sideris et al., 2023; and Wasserman et al., 2023).

The other set of legal issues relate to people living without permission on land engaging in criminal activity. Unauthorized users are usually trespassing. They may attempt to or successfully break into buildings and commit larceny. Some of this criminal activity may be conducted by people living in encampments, or by people housed or unhoused not living in encampments. Of DOTs responding to the survey in NCHRP LRD 87, illicit drug use and dealing was the most frequently mentioned crime concern (NASEM, 2022a). Violence appears briefly in past studies (and media reports (Page, 2022; Ireland, 2023)) but has not been systematically investigated. It is worth noting that (beyond just DOT settings) unhoused people are, broadly speaking, more likely to be the victims of violent crimes than the perpetrators (Washington Low-income Housing Alliance, n.d.; Snow, Baker, and Anderson, 1989; Klontz and Demerice, 2016; Alfonseca, 2022; Navarro, 2018; D. Miller, 2023; Schmid, 2022).

### 3. Responses to Encampments on DOT Property

#### *Framing Responses*

Facing these issues, DOTs have responded in a variety of ways. Taking a step back and understanding the complexity of the problem that requires partnerships, special skills, and personnel, Tremoulet et al. (2012) proposed six guiding principles for addressing homelessness on public right-of-way: 1) homelessness is a complex societal issue that touches many sectors; 2) adopting a problem-solving approach through partnerships with both social services and law enforcement (“push” and “pull” approaches) proves effective; 3) simply moving people experiencing homelessness from one place to another is costly, does not address root causes, and worsens relationships with the unhoused individuals and their advocates; 4) front-line staff needs support in dealing with unhoused people and encampments; 5) agencies need training, skills, knowledge, and flexibility to devise strategies that address the various situations they may encounter; and 6) developing and maintaining partnerships is critical, given that homelessness is a long-term issue.

Based on these principles, Tremoulet et al. (2012) recommend three categories of strategies to addressing homelessness on public right-of-ways: namely “humane displacement,” “short-term accommodation,” and “long-term arrangement” (Tremoulet et al., 2012, p. 6). For example, Massachusetts and Oregon DOTs adopted the “humane displacement” approach, combining “pull” elements such as intensive outreach and case management by social service agencies and “push” elements such as local law enforcement setting and enforcing a firm deadline for moving. In another case, Oregon DOT (ODOT) combined “short-term accommodation” and “long-term arrangement” to relocate an encampment called Dignity Village in Portland. ODOT first allowed residents to remain in place for two months after the decision to remove their encampment and then worked with residents, the City of Portland, and the advocacy group Street Roots to locate a permanent alternative location. In both this and other cases, ODOT employed defensive designs and patrols to stop encampments from returning.

In a separate report, Bassett et al. (2013) report findings from a survey and interviews of DOT staff from 25 U.S. states and British Columbia, Canada about whether homelessness was an issue and how it was addressed. Of 67 staff respondents, 48 (70%) reported that they or their coworkers encountered homelessness and encampments in their work, and 27 (40%) said that homelessness is regarded as an operational challenge by their agency. Their research revealed that the common approach to addressing homelessness in public property relies on law enforcement only and can only temporarily remove individuals experiencing homelessness. In contrast, more successful approaches rely on partnerships with law enforcement and social services as well, to introduce both a “push” and a “pull” factor.

Ricord (2020) describes findings from a survey by Washington State DOT of 18 state DOTs about homeless encampments on public rights-of-way, which largely corroborated the findings from Bassett and colleagues (2012, 2013). Just two responding DOTs reported no issues with homelessness. Ricord also identifies two common strategies adopted by state DOTs. First, DOTs often adopt a multi-agency approach, where DOTs partner with law enforcement and



social services agencies (often local) to clean up or clear encampments. Second, DOTs utilize preventive maintenance (or defensive design) to prevent encampments from forming or re-forming. Such practices—critiqued in other contexts as “hostile architecture” (Rosenberger, 2017; Hu, 2019; and Suleiman, 2022)—include landscaping to reduce natural cover and obscuring vegetation; putting up fences, walls, and other deterrent structures (Ricord, 2020).

As these studies demonstrate, DOTs’ approach to responding to homelessness usually has the ultimate goal of removing and deterring encampments from their properties. During the removal processes, DOTs often collaborate with partners from local law enforcement, who enforce moving deadlines and evict encampment residents who choose to remain after the deadline, and from social service agencies, who conduct outreach and case management to offer alternative shelter and other services to encampment residents. After the removal process, DOTs may upgrade their rights-of-way with defensive designs and increase patrols. While these practices could meet the DOTs’ goal, responses that have better outcomes for encampment residents tend to also involve municipal governments and other government agencies that have more resources, including land and shelters, to offer unhoused people a more secure, safer location to sleep. And as it stands, the most common DOT response to homelessness, encampment removals, are expensive: the California Department of Transportation (Caltrans) spent \$10.04 million in Fiscal Year 2017 clearing encampments, 34.2 percent more than the prior year (Caltrans, 2018), and large encampments can cost up to \$400,000 each to remove (Loukaitou-Sideris et al., 2023 and Wasserman et al., 2023).

## *Partnership*

Encampments on DOT rights-of-way are an important issue to address, amidst a fraught social, safety, legal, and design landscape. Yet only a few studies directly address how DOTs can respond to it (Loukaitou-Sideris et al., 2023 and Wasserman et al., 2023). A common theme from these studies is that DOTs often have to work with partners in law enforcement, social services, and local government in order to address homelessness. One of the earlier papers reported a case study of how Florida DOT addressed homeless encampments along a stretch of U.S. Highway 301 being widened (Potier-Brown and Pipkin, 2005). Florida DOT formed a community impact assessment team which planned strategies with local law enforcement, the county parks department, and social service agencies that the encampment residents regularly used. Through social service agency staff, the team delivered construction notices and asked the encampment residents to relocate by themselves. Before construction began, the majority moved away.

The goals of different partners in homelessness response—as a “messy problem”—do not match exactly. State police want to prevent and reduce crime, DOTs want to keep the road network safe and operating, often by keeping or moving people off their land, social service providers want housing stability for unhoused people, etc. The challenge is finding strategies that are in concert with these potentially conflicting but potentially compatible objectives. Partnership will work only if those kinds of strategies are found, and there is trust among partners that each will play its part.

## *Design and Construction Standards*

There is no formal regulation of defensive design, also referred to as “hostile architecture,” in publicly available national standards. Our search through publicly available design standards at state DOTs and in the broader set of design standards for realms beyond just transportation uncovered no regulations nor recommendations for defensive design standards per se or best practices.

### **Benches**

Federal Americans with Disabilities Act (ADA) standards discuss benches’ dimensions, their back support, and open space around them. However, the standards generally focus on indoor benches and do not discuss issues of defensive design (U.S. Access Board, 2014). Meanwhile, the latest version of the Public Right-of-way Accessibility Guidelines (PROWAG)—the federal guidelines for design on streets and in transportation settings under the ADA and Architectural Barriers Act, produced by the U.S. Access Board (2023a) and put into effect in September 2023—explicitly includes accessibility standards at transit stations, stops, shelters, such as rules on the clear space required around them (U.S. Access Board, 2023b). But PROWAG also does not include guidance on benches’ potential use by the unhoused (for instance, whether to add armrests that block lying down on them).

On the other hand, public debate around hostile architecture often centers on these elements of benches. To name just a few examples, in New York City, the Metropolitan Transportation Authority (MTA) temporarily removed some benches from subway stations, with a staff person stating in a later-deleted tweet that they were removed “to prevent the homeless from sleeping on them” (quoted in Spivack, 2021). The MTA later replaced them and others with benches with large armrests and/or no backs and also installed “leaning bars”—inclined wooden slats to lean against but too high and steep to sit on—that faced criticism from disability advocates (Spivack, 2021; Rivoli, 2017). The new Moynihan Train Hall at Pennsylvania Station in New York City lacks seating completely in order to prevent unhoused people from resting there, per the critique of a number of elected officials and many observers (Budds, 2021; Colon, 2022; Hoylman-Sigal et al., 2022).

The City of New York does publish design guidelines for publicly installed benches in particular (New York City Department of Transportation, 2020). Their standard benches “are designed to enhance usability for older adults and people with ambulatory disabilities”; they do have center armrests (New York City Department of Transportation, 2020, p. 181). The City also has guidelines for “privately owned public spaces”—parks, courtyards, etc. open to the public in exchange for greater development rights (New York City Department of City Planning, 2024). These prohibit “deterrents to seating, such as spikes, rails, or deliberately uncomfortable materials or shapes” (New York City Department of City Planning, 2024), but compliance and enforcement are lax: an audit found over half of such spaces do not provide required amenities (Landa, 2017; Hu, 2019).

Meanwhile, in Santa Monica, California in the Los Angeles area, the city replaced traditional benches without armrests with architecturally distinctive individual seats. A stated criterion for



the new seating was that it be “imperviousness to loitering” (quoted in Barragan, 2014b). Residents complained, though disabled riders in this case voiced concern about a lack of armrests in an initial seat design (Barragan, 2014a, 2014b; Simpson, 2014a, 2014b).

## **Fences**

In two of the transportation design guide documents we reviewed, fencing placement and design are detailed but with little explicit reference to homelessness. Caltrans’ Highway Design Manual (2023) categorizes fencing into freeway and expressway access control fences, privacy fences, temporary fences, environmentally sensitive areas and species protection fences, and enclosure fences. These last offer security for Caltrans facilities, and the department recommends chain-link fencing. Facility geometries and types may merit other designs, including barbed wire, as determined with operations and maintenance staff at the facility. For all types of fences, the manual notes that “such fencing is not intended to serve as a complete physical barrier” (Caltrans, 2023, pp. 700-1).

The Federal Railroad Administration (FRA) has also issued guidance on fencing off railroad rights-of-way, as part of its Trespass and Suicide Prevention Toolkit (2023). Because fencing cannot be installed everywhere due to cost, the FRA recommends the “presence of homeless encampments” as one of the factors in deciding where to add fencing (FRA, 2023), as does TCRP Report 233 (NASEM, 2022b). The guide discusses the advantages and disadvantages of four types of fencing—chain link, intertrack, welded wire, and expanded metal—and notes that a study has shown a 95 percent reduction in trespassing due to fencing (compared to 91% from landscaping and 31% from signage) (FRA, 2023; Silla and Luoma, 2011). However, both this guide and TCRP Report 233 observe that fencing may merely shift trespassing to other areas (FRA, 2023; NASEM, 2022b). The FRA recommends fencing to run at least 1,600 feet and suggests grease or paint to deter climbing (FRA, 2023).

## **Hardscaping**

Finally, we have not found formal guidelines on whether, where, and how to install spikes, bollards, boulders, riprap, etc. meant to prevent sitting and lying in an area or on a surface. A visible way that these elements do interact with design guidelines, though, is controversies in a number of cities over planters, rocks, and other large objects placed on public rights-of-way. Private individuals have placed them on sidewalks in order to prevent people from camping, causing advocates to lodge complaints and cities like San Francisco and Los Angeles to sometimes remove them for obstructing the required six-foot clear path in the right-of-way (Sjostedt, 2023; Oreskes, 2019; Ray, 2019).

## **4. Lessons from Other Public Agencies**

Several other studies that look at how police and city governments address homeless encampments offer relevant insights for DOTs. Their approach to addressing homelessness certainly differs from DOTs, not the least because they have different responsibilities and hence objectives. Nonetheless, DOTs can either learn from or join their strategies.

The U.S. Department of Justice’s Office of Community-oriented Policing Services guidelines for police addressing homeless encampments (Chamard, 2010) recommend a number of strategies, some similar to what DOTs have already been doing, such as defensive designs, encampment removals, and resource centers. Other strategies may be useful to DOTs. For instance, the guidelines recommended police departments to improve interactions with people experiencing homelessness by developing policies on interacting with unhoused people for police officers and creating specialized, trained units experienced in homelessness response. Another strategy is to ensure safety and public health within encampments by regulating the structures, adding public toilets, and cleaning them.

The guidelines also discuss longer-term strategies that target the more fundamental issues behind homelessness, such as promoting the “housing first” model, which prioritizes housing without preconditions such as drug treatment, and lobbying for more mental health and substance abuse funding and resources (Chamard, 2010). In contrast, relying solely on law enforcement has only short-term effects and worsens the relationships between police, homeless individuals, and advocates—a noteworthy finding from a guide for and by law enforcement agencies..

Instead—and contrary to the practices of most jurisdictions—Junejo (2016) argues that encampments could be accommodated in the short term. They do offer some advantages (like those described above for encampments near DOT rights-of-way), including improved visibility, community formation and the safety and stability benefits that come with it, at least as compared to living unsheltered or even in certain often-restrictive shelters. He points out that sweeps or removals of encampments have not reduced unsheltered homeless counts because encampment residents often reestablish encampments, citing data from Honolulu, Seattle, and San Francisco. Instead, sweeps disrupt encampments and may force residents farther away from services, community, and police. Moreover, sweeps are costly (as described for DOT sweeps above) and can cause emotional and psychological tolls and loss of personal property. Thus, Junejo recommends that cities should not sweep encampments unless the encampment poses a real threat to the health and safety of its residents and surroundings and should provide essential services to encampments. And most importantly, encampments should only serve as a temporary solution, with plentiful, affordable, permanent housing for people experiencing homelessness made available in the long run.

A recent study by the U.S. Department of Housing and Urban Development (HUD) indicates that U.S. cities are still responding to encampments with the primary goal of removing them, though some with outreach activities to aid encampment residents (Dunton et al., 2021). The study covered nine cities, including Chicago, Fresno, Houston, Las Vegas, Minneapolis, Philadelphia, Portland (Oregon), San José, and Tacoma. A common strategy among these cities is “clearance and closure with support”: removing structures and belongings from encampments or requiring people to move, accompanied by resource-heavy outreach to connect residents with needed services and help ensure that each has somewhere to stay thereafter (The degree to which these offers of shelter are realistic in practice and made in good faith is often debated.). Other strategies, such as creating low-barrier shelters and connecting unhoused people with permanent housing, are used by fewer cities. In terms of implementation,

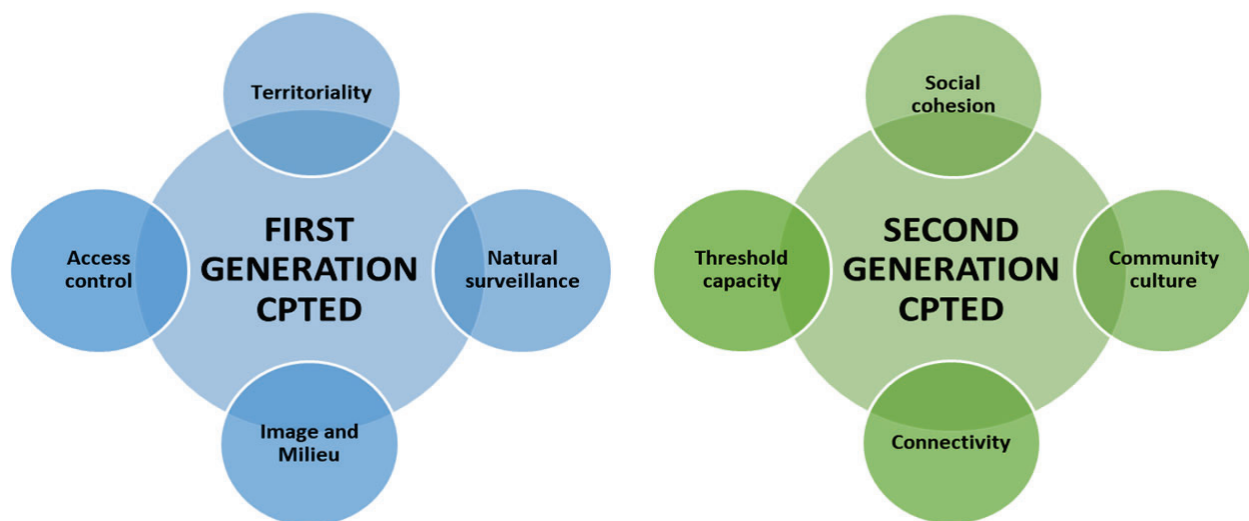
in all nine cities, the mayor’s office or a city department coordinate diverse partners. The most common and involved partners include police departments for enforcement), departments of sanitation for cleaning, and homeless service providers for outreach and case management (Dunton et al., 2021).

As demonstrated by these studies, outreach efforts are important in addressing homeless encampments, especially when law enforcement is also involved and when encampments are to be removed. Following this lead, DOTs thus should collaborate with relevant law enforcement agencies as well as social service agencies, to ensure that residents are offered substantive alternative shelter. In other circumstances, as Junejo (2016) argues, homeless encampments may remain for a time as long as they do not threaten the safety and health of encampment residents and the surrounding communities. For DOTs, this could mean that removal is not the only option for addressing homeless encampments. For low-danger sites, DOTs could work with local departments of sanitation to clean areas and support residents. However, this option may be limited for DOTs, given the perils of many freeway-proximate DOT lands.

### *Crime Prevention through Environmental Design*

One particular set of responses, Crime Prevention through Environmental Design (CPTED), is a school of thought that interventions in the built environment and urban form can reduce crime, in part by reducing targets and increasing chances of would-be criminals being seen or caught. These interventions can be more direct, such as creating spaces with clear sight lines, lighting, and concrete barriers between public and private space, or less direct, such as creating pedestrian-oriented retail, parks, art, etc. that foster social cohesion and sense of community ownership over space. CPTED traces its roots to urban theorist and activist Jane Jacobs’ writing and has been developed in multiple “generations” since (International CPTED Association, 2022, n.d.; Singapore National Crime Prevention Council, 2003; VTA, 2023).

*Figure 1. "Generations" of CPTED*



Source: International CPTED Association, 2022

The full literature on CPTED is beyond our scope, but its principles have long been applied in transportation settings. Pearlstein and Wachs, in a 1982 paper, found that crime increased with ridership but was correlated with traveling through high crime surrounding areas. While they note that environmental design elements had already been incorporated into station design and vehicle operations, they raised a few issues: transit environments varied immensely, actual statistics on crime on transit differ from often-distorted public perception, and organization design must be considered along with physical design (Pearlstein and Wachs, 1982). Levine, Wachs, and Shirazi (1986) studied bus stops in Los Angeles and observed that modifications to the physical environment of certain hotspot stops could deter some common crimes, though not more violent ones. Loukaitou-Sideris, Liggett, and Thurlow (2001) also find through modeling that a number of characteristics of the built environment and streets correlate with crime rates by bus stop.

TCRP Synthesis 21, on transit security, cites a number of successful case studies of transit agencies implementing CPTED tactics, though it notes that lack of data make these successes difficult to quantify (NASEM, 1997). For instance, the synthesis (NASEM, 1997) and another report (National Crime Prevention Council, 2017) note that the Metro system in Washington, D.C. designed stations to have good visibility and lighting and used materials resistant to vandalism, which they observed reduced crime.

Overall, 19 percent of 245 studies in a comprehensive review of crime and transit research mention CPTED (Ceccato, Gaudalet, and Graf, 2022). CPTED and “environmental criminology...often provide the theoretical bases for these studies,” note the authors (Ceccato, Gaudalet, and Graf, 2022, p. 130), though they conclude that the factors behind transit safety are highly complex and dependent on perception (Ceccato, Gaudalet, and Graf, 2022).

Transit agencies today employ CPTED principles in design, construction, and operations (For example, the Santa Clara Valley Transportation Authority (VTA) (2023) issued a primer on CPTED.). APTA produced a best-practice guide on CPTED for transit facilities, including increasing natural surveillance through sightlines, lighting, and cameras; demarcating private and public areas with structures and landscaping; supporting activities and art in public transit spaces where appropriate; and conducting regular maintenance (APTA Transit Infrastructure Security Work Group, 2010).

In freeway environments, we found fewer explicit connections to CPTED strategies. The U.S. Department of Transportation (USDOT) recommends CPTED as an evidence-based strategy in a number of transportation settings (USDOT Office of Policy, 2015). Morgan State University and the University of Delaware researchers are currently studying case studies of CPTED in mid-Atlantic transportation environments, including state DOT lands (Morgan State University, 2024).

CPTED has faced criticism on two fronts. First, there is debate about how effective it is. While USDOT (USDOT Office of Policy, 2015) and many of the studies cited above offer evidence that CPTED reduces crime, other studies and groups are more skeptical (University College London Jill Dando Institute of Security and Crime Science, 2017; Cozens and van der Linde, 2015; Annan, 2021). A review of studies for the UK College of Policing, the professional organization

of the country's law enforcement bodies, found low evidence of CPTED's effectiveness, with many studies dated by now and few experimental or quasi-experimental designs (University College London Jill Dando Institute of Security and Crime Science, 2017). In the transportation realm, a small-scale Australian survey found that riders perceived a train station designed with CPTED principles to be less safe than one designed without them (Cozens and van der Linde, 2015).

Scholars have also assailed CPTED for fostering exclusion and promoting anti-homeless "hostile architecture," described above (White and Sutton, 1995; Chellew, 2019; Cozens and Love, 2017; Annan, 2021). As Cozens and Love (2017, p. 19) argue:

"The exclusionary properties of CPTED can be (and have been) used to provide privilege to some groups in society at the expense of others. This occurs in CPTED via a variety of methods from specific exclusion by limiting access to only the permitted, to the discouragement of certain social groups....CPTED interventions can be used in many ways to segregate the poor from the rich."

This critique posits that the physical and social design elements of CPTED exclude not just people experiencing homelessness but also many racial and economic groups not privileged in society, creating both literal and metaphorical gated communities (Yates, 2021; Williams, 2023). These critiques rarely focus on transportation in particular.

While CPTED has many implications for homelessness on state DOT lands and how state DOTs respond, CPTED is intended to address crime, not homelessness per se. Indeed, much of the CPTED literature in transportation discusses vulnerabilities to terrorism (e.g., Kubalova and Loveček, 2023; Wachs et al., 2015), crimes with no relation to homelessness. Nonetheless, CPTED strategies do affect homeless counts and the experience of unhoused people in and around DOT spaces.

## 5. Gaps in Knowledge

Overall, issues of homelessness in state DOT environments are understudied. In particular, we found the following major research gaps.

Research into homelessness in DOT settings is largely missing an understanding of the motivations, concerns, and experiences of unhoused residents themselves. We can make assumptions about why people experiencing homelessness choose to shelter near highways, underpasses, etc.—to the degree that they have a choice—but more ethnographic and/or survey research is needed. The effects of living in encampments near highways, the consequences of sweeps, the barriers to shelter elsewhere, and other concerns would be best explored through research centered on the experience of current or formerly unsheltered people there.

Meanwhile, the relationship between homelessness and design, construction, and maintenance also has significant gaps in knowledge. While research and design standards discussed above sometimes touch obliquely on homelessness, often through lenses of unauthorized access or

property crime, we have not found comprehensive research documenting and evaluating best practices for design of infrastructure; materials, pavements and landscaping; construction protocol; defensive design; etc. in the context of homelessness on DOT land. DOT staff and partners should look to literature from other sectors on this front to develop best practices.

Finally, the existing literature has few examples of evaluations of particular programs to reduce the number of encampments on DOT rights-of-way and the effectiveness of outreach programs in conjunction with encampment removals. This stems in part from the lack of data, such as homeless counts before and after program implementation, qualitative data on the experiences of unhoused people, etc. In addition, DOTs, researchers, and homeless advocacy organizations differ amongst themselves over how to define and measure success in responding to homelessness.

These gaps may stem from the fact that homelessness in DOT environments sits at the intersection of a number of academic disciplines: planning, engineering, sociology, and more. Interdisciplinary research, drawing on researchers and methods from a number of fields, could help fill these gaps.



## Chapter 3: Task 1a, Continued - Industry Scan

DOTs across the country, and their partners in government and beyond, are taking a number of new actions to address homelessness on their properties. In this section, we first discuss broadly the publicly available information on these efforts and then briefly profile in greater depth a number of them, selected to showcase innovative strategies. Some of these are still in development or implementation, with results to come; others have already been deployed and even refined. We gathered information on these from agency documentation, relevant news reports, TRB Annual Meeting presentations, a scan of the websites of all 51 state and district U.S. state departments of transportation, and interviews and data collection with 13 state DOTs and eight external organizations, the last two methods conducted as part of the UCLA Institute of Transportation Studies team's research published in 2023 (Loukaitou-Sideris et al., 2023; Wasserman et al., 2023) (See Appendix B for maps). These semi-structured interviews, whose goal was to understand organizations' experiences with and approaches to homelessness in DOT-managed spaces, focused on the nature and extent of unsheltered homelessness on DOT land; organizational responses to encampments and their removal; relationships and collaboration between state DOTs, law enforcement, and social service agencies; challenges encountered; and desired approaches to homelessness.

We divide the new and emerging practices strategies in this section into three categories: 1) changes to internal DOT organization activities and protocols; 2) coordinated outreach and rehousing efforts, to get people living on DOT land housed elsewhere with needed services; and 3) use of DOT land itself.

All of these categories, especially the latter two, involve deep and/or broad external partnerships; we discuss those below in each section. Throughout these examples, we found that trust is incredibly important in building these partnerships and making sure they succeed: trust between DOTs and external partners, trust between unhoused people and staff who interact with them, trust between the public and their government, etc.

### 1. Available Information Online

DOTs across the country document and advertise a variety of strategies in response to homelessness, but rarely systematically or in easy-to-access locations. Our scan of the official websites of DOTs of all 50 U.S. states and the District of Columbia also revealed the varied degrees of engagement of DOTs with the unhoused population. Eleven of the 13 DOTs interviewed by the UCLA Institute of Transportation Studies research team have published information about how they approached the issue of homelessness (Loukaitou-Sideris et al., 2023; Wasserman et al., 2023). Such information mostly acknowledges that there is a need to address the problem of homelessness and encampments on DOT rights-of-way in particular, which interfere with the daily operation of DOTs. Some DOTs published policies and protocols for addressing homeless encampments, the most common approach for which was encampment removal. For example, Washington DOT and Delaware DOT published their encampment cleanup/removal policy and procedures, while Indiana DOT (IndOT) mentioned in

a report their homelessness and right-of-way policy pilot. These policies, while intended to guide the removal of encampments, also emphasize the need to ensure the safety of DOT personnel and encampment residents, as well as the need to balance the rights of encampment residents and the function and maintenance of transportation infrastructure.

Some DOTs also mention partnerships or collaborations with other agencies and organizations. For example, Hawai'i DOT partners with the state Office of the Coordinator on Homelessness and Department of Public Safety for outreach and enforcement along highway corridors; Oregon DOT partners with local governments, law enforcement, and social services in their efforts to clear encampments along freeways; and Arizona DOT mentions enforcement officers collaborating with other agencies in outreach, with the DOT helping to make arrangements with service providers for encampment relocation. News articles report Alabama DOT collaborating with municipalities to clean up debris under underpasses and relocate individuals in homelessness (Stevens, 2022; Ramey, 2022).

Some DOTs also report on their efforts to reduce encampment numbers and recurrence: California Department of Transportation (Caltrans) notes the increased costs associated with encampment cleanups; Oregon DOT details a past effort to relocate an encampment to make way for construction, citing law enforcement as a “push” factor and outreach as a “pull” factor; Nevada DOT relates that the number of unhoused individuals living in their freeway rights-of-way has decreased due to weekly patrols; New Mexico and Washington DOTs report increased funding to address homelessness encampments; and Florida DOT mentions a data-sharing project with homeless services.

On the whole, though, little information on homelessness response among DOTs is publicly available across all states, with the posted information spotty (in terms of exact protocols, data, strategies, locations, etc.) even among those DOTs with available documentation.

## 2. Innovative and Emerging Practices

With this wide scan as context, we next turn to a selected set of innovative practices DOTs have implemented or are implementing. For these, we delved further than information available publicly from DOTs by synthesizing interviews with DOT and external partner staff, news articles, and documentation not available online.

### *Internal DOT Organization and Protocols*

DOTs have made changes within their own organization to better and more proactively address homelessness. Below, we profile such DOT protocols and organizational changes.

#### **Prioritization Criteria**

Some DOTs, often facing the challenge of addressing a large number of encampments using limited resources, adopt a prioritization strategy for encampment removal. While there are differences in these DOTs' exact strategies, the prioritization is often based on a similar set of factors including health and safety risks for encampment residents, interference with traffic flow



and risks of traffic accidents, damages to transportation infrastructure, and interference with scheduled construction and maintenance work. A total of seven DOTs interviewed prioritize encampment removals in some way. Minnesota DOT pioneered using a formal policy with a tiered prioritization scheme, Caltrans adapted it (Compare to the survey results in Chapter 4). As characterized by staff, Minnesota DOT's prioritization scheme was driven by a need for both DOT and outreach teams to understand where it is most appropriate to focus time, effort, and resources. The scheme categorizes encampments into high, medium, and low-priority sites based on the size of the encampment and its impacts on important infrastructure and the surrounding community, as well as the safety and health risks associated with the encampment, as assessed by DOT staff.

Caltrans initially adapted this scheme and categorized encampments into four levels of priority based on a similar set of factors. Under these criteria, encampments in the highest level were prioritized for removal and those in the lowest were deprioritized or even informally allowed to remain. In October 2022, however, Caltrans issued new guidance, classifying encampments into only two priority categories: "Critical Priority for Expeditious/Urgent Removal" for encampments representing "an imminent threat to life, health, safety, or infrastructure" and "Removal Needed" for all other encampments (Aceves, 2022, p. 2).

Five other interviewed DOTs, in Oregon, Indiana, Delaware, Washington, and Alaska, lack a formal tiered policy but informally prioritize encampment clearance, mostly based on safety and health risks. When asked about whether they prioritize encampments for removal, an Oregon DOT staffer responded, "in reality, yes, but formally, no, because they are all illegal." This demonstrates that the underlying impetus for prioritization plans is in large part a lack of resources to address all encampments, rather than a concerted policy to accommodate unhoused people in places on DOT land. These plans, if executed as intended, serve to move DOTs away from complaint-driven responses, but again, they likely derive as much from a need to prioritize limited DOT and partner resources. Especially in smaller states and states with lower rates of unsheltered homelessness, DOTs instead attempt to respond to and clear any encampment that is brought to their attention.

## **Responses and Protocols Tailored to Different Environments**

DOTs have taken different, tailored approaches to homelessness in urban, suburban, and rural areas. While we did not find as clearly developed a protocol for differentiating these approaches by urban environment as we did for the prioritization strategies above, we describe below industry scan findings on the differences in DOT homelessness across these environments and different responses to it.

Indiana DOT staff found that, from their experience and encampment location data they have started to collect, encampments are more common in urban areas than rural, with rest areas remaining largely free of them. Staff at New York State DOT observed encampments in particular under underpasses and viaducts, sometimes within compartments in bridges not meant to be accessed. While occasionally people camped in or near construction sites, active construction tended to deter people from camping, they noted. A few DOT interviewees observed that areas where people could panhandle well also attracted encampments.

Interviewed staff at Hawai'i DOT and the State of Hawai'i noted that while encampments are located in many environments, some of the trickiest to address are those along DOT-owned urban streets, on sidewalks and small green spaces and especially near service providers. They also observed that encampments near waterways can cause environmental damage and pollution, requiring specialized restoration. Finally, they mentioned that encampments that straddle property lines between DOT and non-DOT land are more difficult to address, necessitating particular cooperation with other levels of government or private owners. Staff at Arizona DOT indicated to the research team that they tend to use wire fencing in rural areas to prevent encampments, while in urban areas, they use chain-link fencing instead.

On the other hand, external partners interviewed noted that while rural areas may lack the larger encampments of urban areas, they have smaller campsites throughout highway-adjacent wooded areas, appearing and disappearing more frequently, with more situationally unhoused rather than chronically unhoused residents. Moreover, data on homelessness and availability and proximity of service providers is generally worse in rural areas, posited one non-profit interviewee.

### **Office/Dedicated Staff for Homelessness Coordination**

Two DOTs interviewed, in Hawai'i and California, have established a special office within their agency that coordinates their homelessness response (Compare to the survey results in Chapter 4). Led by a homelessness coordinator/lead, this office interacts with other public agencies and nonprofits involved in homelessness response; its staff may even undertake outreach to unhoused individuals themselves. Such staff or offices can develop encampment removal protocol, such as the prioritization criteria above, or work to implement the other strategies in this chapter.

The homelessness coordinator at Hawai'i DOT works closely with a homelessness coordinator at the governor's office and is part of an Interagency Council on Homelessness with other state agencies like the Department of Land and Natural Resources. Together, they have developed consistent strategies and written documentation on homelessness response on all public land; organize outreach, shelter, and other homeless services (with external partners); and conduct cleanup of sites and storage of belongings. Hawai'i DOT's coordinator personally actively engages with individuals living in encampments and over time has developed strong relationships with them. This has proven to be an important factor for some individuals classified by other service providers as service resistant to accept help and move into shelter and housing.

Similarly, Caltrans has established a homelessness coordinator program, which assigns a coordinator in each of the agency's districts, as well as having statewide coordination staff. According to the agency's recently published guidance, district coordinators organize all aspects of encampment response and reach out to serve as the primary contact for external partners and internal staff in various departments (Caltrans Division of Maintenance, 2023). Interviewees from Caltrans noted that by having statewide and district coordination staff, they are trying to be more proactive in connecting with local partners. In Southern California, the region's coordinator's office partners with the Los Angeles Homeless Services Authority to offer street

medicine and case management to unhoused individuals camping on DOT properties. In such a large state as California, the effectiveness of such collaborations varies in different regions, as some service providers are overwhelmed or unresponsive. Staff in Hawai'i noted that working in a small state, where DOT staff and even leadership can conduct personal outreach and become familiar with both particular people and locations, lies behind their success. Nonetheless, while the same ground-level model may not work in a larger state, having a coordinator's office is important for the opposite reason: establishing consistency across a complex and subdivided bureaucracy and promulgating guidelines like encampment response prioritization schemes, discussed above. Finally, even if maintenance staff end up conducting most of the initial or unplanned interactions with unhoused individuals, having a dedicated, trained staff to call in to follow up can lead to more targeted and sensitive responses.

### **Office Dedicated to Upstream Housing Policy**

In addition to state and district homelessness coordinators, Caltrans is developing Housing and Homelessness Solutions Program. The initiative's planners will develop ways that Caltrans can work with other bodies to prevent homelessness in the first place, through upstream interventions such as displacement protection around transportation projects and coordinated community investments. Staff recently interviewed noted that the initiative has faced delays, though, especially given the limited policy levers a state DOT has to affect housing policy.

### *Coordinated Outreach and Rehousing Efforts*

In addition to the internal strategies above, DOTs have also taken action with external partners to address homelessness. Below, we profile three efforts at conducting outreach to unhoused people on DOT lands and rehousing them.

#### **Coordinated Rehousing Effort: Project Off-ramp**

Project Off-ramp was a partnership between the City of Fresno in central California, Caltrans, and California Highway Patrol to address homeless encampments along freeways during the pandemic. Prior to the initiative, homelessness along freeway rights-of-way was common and dangerous to encampment residents, with three traffic fatalities in a two-week period and 618 fires in 2020 (T. Miller, 2021). At the same time, acceptance rates for shelter among unhoused Fresno residents were low.

Through this project, individuals living in encampments were offered individual rooms in triage centers (temporary, low-barrier shelters adapted from a model from San Francisco, with pets, partners, and possessions allowed; no curfews; and intensive services), converted from motels and purchased by the City of San Francisco using federal pandemic relief money. Those placed in the motels could stay there up to two years, with a typical duration of 90 days, while receiving on-site housing-focused services. These services and referrals were aimed at placing people in permanent housing, which, while still constrained and unaffordable in California, was aided in Fresno by the conversion of hotel rooms to permanent affordable housing through California's sister federal stimulus Project Homekey program (Juarez, 2021). Through this program, the City of Fresno was converting some triage centers to affordable housing units to increase the local

affordable housing stock and ensure that there was sufficient stock for individuals experiencing homelessness to transition into.

The initiative began with a geospatial survey by Caltrans, mapping encampments along all freeway rights-of-way. The City then partnered with the Fresno Housing Authority (which previously had not done much work in temporary shelters and homelessness) and two nonprofit shelter operators, along with Caltrans and the Highway Patrol. The City contracted with the organization Poverello House for 18 frontline outreach workers, some of whom were formerly unhoused, to work with unhoused residents. After outreach was conducted in different sectors, residents were referred to housing, and a notice of at least a week was given (longer than the previous typical Highway Patrol notice of three days), Highway Patrol cleared the section and thereafter enforced no camping along it, under an “enhanced enforcement agreement” with Caltrans. Caltrans then conducted repairs and construction in the section. The process repeated along each freeway.

According to city staff interviewed, the project had about an 80 percent acceptance rate (individuals living in freeway encampments accepting to be placed into the triage centers/temporary housing when encampments were cleared), a marked increase from before, and about a 50 to 60 percent safe exit rate (individuals exiting the triage centers into permanent housing). However, staff noted that a few individuals who did not transfer into Project Off-ramp shelters would move from one freeway section to another, as each encampment was cleared. Others moved elsewhere in Fresno, which, while not necessarily a success, at least meant they were away from the dangers of the freeway, as staff characterized the situation. Through this project, all encampments on Caltrans’ right-of-way were cleared, about 500 individuals were relocated and placed into temporary housing, and the right-of-way has since been patrolled by the California Highway Patrol to prevent encampments from returning. Since Project Off-ramp’s initiation, the City expanded it beyond freeways to irrigation canal and railway rights-of-way.

This success comes with a few caveats. For one, as staff mentioned, the motel conversions and services are funded by one-time federal pandemic relief funds. A long-term funding source has not yet been identified as of writing. While staff characterized the situation along freeways as much improved compared to before the pandemic, the flow of homelessness means that this may not last, without additional funding and repeat outreach efforts. Likewise, the role of Caltrans was somewhat limited. Caltrans was only responsible for the initial assessment and mapping of the encampments, the pre-relocation removal of non-personal property, and post-relocation restoration of embankments, landscaping, and right-of-way security. These tasks are different in degree perhaps, but not in kind, from what other DOTs have been doing. Arguably, though, Caltrans doing only the type of work within its core competencies and having partners do other tasks contributed to the initiative’s successes. The key to the successful outcome was the ability of the City of Fresno to provide the triage centers and a working path to the housing system.

Moreover, complaints, calls, and social media posts about homelessness from housed residents prompted Project Off-ramp, according to staff and media reports (Price, 2021), and it apparently also faced pushback from state public health officials who wanted to abide by Centers for

Disease Control and Prevention (CDC) guidance and leave encampments in place. Indeed, the program represented a blanket clearing of the whole right-of-way, not the four-level prioritized operations Caltrans had otherwise established at the time. Though the much-improved numbers of people sheltered, the path to longer-term housing, the use of trained, unarmed outreach, and the coalition of different agencies and organizations all represent significant improvements, the reliance on enforcement strategies and blanket clearance merits some pause.

More recently, Caltrans asked for (Angst and Holden, 2023; Mitri, 2023; Herbaugh, 2023) and then received over \$100 million in funds from the state (Taylor, 2023; CBS/Bay City News Service, 2023) to clear and clean encampments on its land. Since 2021, the state has removed over 5,500 encampments from public land (CBS/Bay City News Service, 2023).

### **Contracted Service Provider Employee: InDOT’s Partnership with Horizon House**

Indiana DOT (InDOT) contracted with Horizon House, a homeless service provider, for outreach in the Indianapolis area. Under the contract, Horizon House is responsible for conducting outreach and coordinating efforts among different service agencies on behalf of InDOT, when InDOT determines the need to clear an encampment in their right-of-way. InDOT pays for one full-time Horizon House employee working on this task and part of this employee’s manager’s salary. This partnership has achieved some modest positive outcomes: between ten and 50 percent of individuals living in encampments that were engaged during outreach accepted help and were placed into temporary housing.

In contrast, Minnesota DOT had a pilot program that established a similar partnership with a nonprofit outreach agency, but the program was not continued because “it didn’t really significantly change response times and benefits,” according to the interviewee. Thus, it is unclear how much more effective this approach is compared to other arrangements, and it may depend upon the individual outreach person and their ability to establish a relationship and build trust with unhoused people. Nonetheless, the contracting arrangement allowed InDOT to have a trained outreach worker effectively on call, while also still connecting to the broader resources and experience of the service provider.

### ***Use of and Services on DOT Land***

State DOTs are not only taking steps to place people experiencing homelessness in existing shelters and housing, but some are also creatively using their existing land for new shelters or for servicing campsites and encampments. Below, we discuss a few of those efforts.

#### **Shelters on DOT Land**

In 2020, the governor of California directed state land-owning agencies, including Caltrans, to identify surplus or underused parcels that could be used for emergency shelter (Mizes-Tan, 2020), by leasing them to or otherwise arranging their use by a housing agency or organization. However, implementation may run into issues. In Delaware, for instance, a proposal to use a publicly owned parcel next to a highway for shelter and/or longer-term supportive housing was not approved by the legislature, due, according to a partner interviewee, to dispute over whether to use it for mental health treatment instead (It was still vacant as of interviews.). Washington



State DOT also worked with the City of Olympia on a sanctioned campsite, fenced off with portable restrooms on land owned in part by the DOT (NASEM, 2022a). In Minnesota, the DOT rejected the idea, because the potentially available parcels would be located too far from population centers, service providers, and unhoused individuals' existing communities and support networks and because the logistics of security, disability access, etc. for the sites were daunting. On the other hand, as the interviewee from Delaware noted, these potential locations had fewer neighbors who might object to or obstruct their use as shelters. All told—with the right, central locations and working with housing/shelter providers with far more experience in the field than DOTs themselves—at least some DOT surplus land may have promise for sheltering unhoused people.

### **Shelter on DOT Land: The Esperanza Community**

With an estimated 300 to 500 unhoused people living under or by I-35 in downtown Austin, In 2017, the Texas Department of Transportation (TxDOT) started convening a series of workshops. These brought together state, county, and local elected officials and government departments; nonprofits, religious organizations, and service providers; business groups; and more as part of the Austin District Initiative to Address Homelessness. These meetings developed into the Mobility35 Initiative to Address Homelessness (Arellano and Wagner, 2024), part of the department's larger coming project of renovating and expanding I-35 through Austin (Howard, 2023). Products of this group's collaboration include the "Be Safe, Be Seen" pedestrian education campaign, mental health first aid training of TxDOT employees and contractors, and a comprehensive set of TxDOT guidelines for addressing encampments, including service provider partner coordination to help refer unhoused people to housing (Arellano and Wagner, 2024).

The largest homelessness program from Mobility35 was the Esperanza Community. In 2019, the governor and the state Departments of Public Safety, Emergency Management, and Transportation established a sanctioned campsite, the Esperanza Community, on TxDOT land. State and local agencies provided security, food, restrooms, and bus service to the site, while nonprofit partners offered medical and mental health care and housing and services assessments (Arellano and Wagner, 2024).

By 2020, TxDOT signed a service coordination agreement with The Other Ones Foundation, a nonprofit, to manage the site and coordinate the various other service providers serving the site. One of the rare formal agreements between a DOT and an external partner, this agreement included a robust operations plan, insurance and indemnification stipulations, and data collection and sharing requirements. The foundation established its headquarters on site, and it was granted a \$1 per year lease (Arellano and Wagner, 2024).

In 2022, TxDOT and its partners began construction converting the campsite to an ADA-compliant village of 200 tiny home units, communal gathering buildings, laundry, and bathrooms, along with spaces for case management, housing, and health care services. The department also improved the property through drainage, paving, and fencing work. Residents of Esperanza Community themselves were employed in the construction, providing both

economic opportunity and a tangible sense of ownership over the new housing (Arellano and Wagner, 2024; Eubank and Oak, 2021; Weber, 2021).

Over 170 people have moved from the Esperanza Community to permanent housing. The program provides lessons for other DOTs in creative use of their own land, in providing alternative shelter well in advance of major construction projects, and in gathering wide coalitions to fill in gaps where DOTs do not have expertise or resources—TxDOT has worked with over 25 partners in its Mobility35 Initiative to Address Homelessness (Arellano and Wagner, 2024). On the other hand, the initial Esperanza Community campsite was born out of tension and finger-pointing between the state and local officials over addressing homelessness, with the state starting the camp and conducting sweeps on freeway land beforehand without much local coordination, according to news reports (Rich and Pollock, 2019).

The success of the Esperanza Community would not have occurred without the trust and partnership developed between TxDOT and its local service providers. Building on this success, TxDOT announced in 2024 the purchase of seven more acres to expand the site and adding an additional 100 shelters (Arellano and Wagner, 2024; Brolley, 2024; Lehmkuhl, 2024).

### **Sanitation for Encampments on DOT Land**

On a smaller scale, DOTs and municipalities have provided sanitation services to unhoused people on DOT land. Minnesota DOT, for instance, removes trash from encampments on their land, on a growing basis and not as part of encampment removal. An interviewee at Minnesota DOT reported that doing so, while requiring resources, helps avoid the much more expensive costs of cleaning up a long-term, previously uncleaned encampment after a full clearance. The DOT receives support in this effort from municipalities, which collect needles, distribute Narcan kits at encampments to reverse the effects of opioid overdoses, and set up containers for needle disposal, portable restrooms and hand-washing stations, especially during the pandemic.

# Chapter 4: Task 1b & 1c DOT Survey and COC Survey Findings

## 1. Survey of Departments of Transportation

### *Methodology*

In November 2023, we conducted a survey of state DOT staff to gather information on practices for responding to, managing, and deterring encampments on ROWs. The survey explored challenges state DOTs face in design, construction, and maintenance activities. Respondents were sent the survey on November 29th and received a reminder email on December 12th. See Appendix C for the survey instrument.

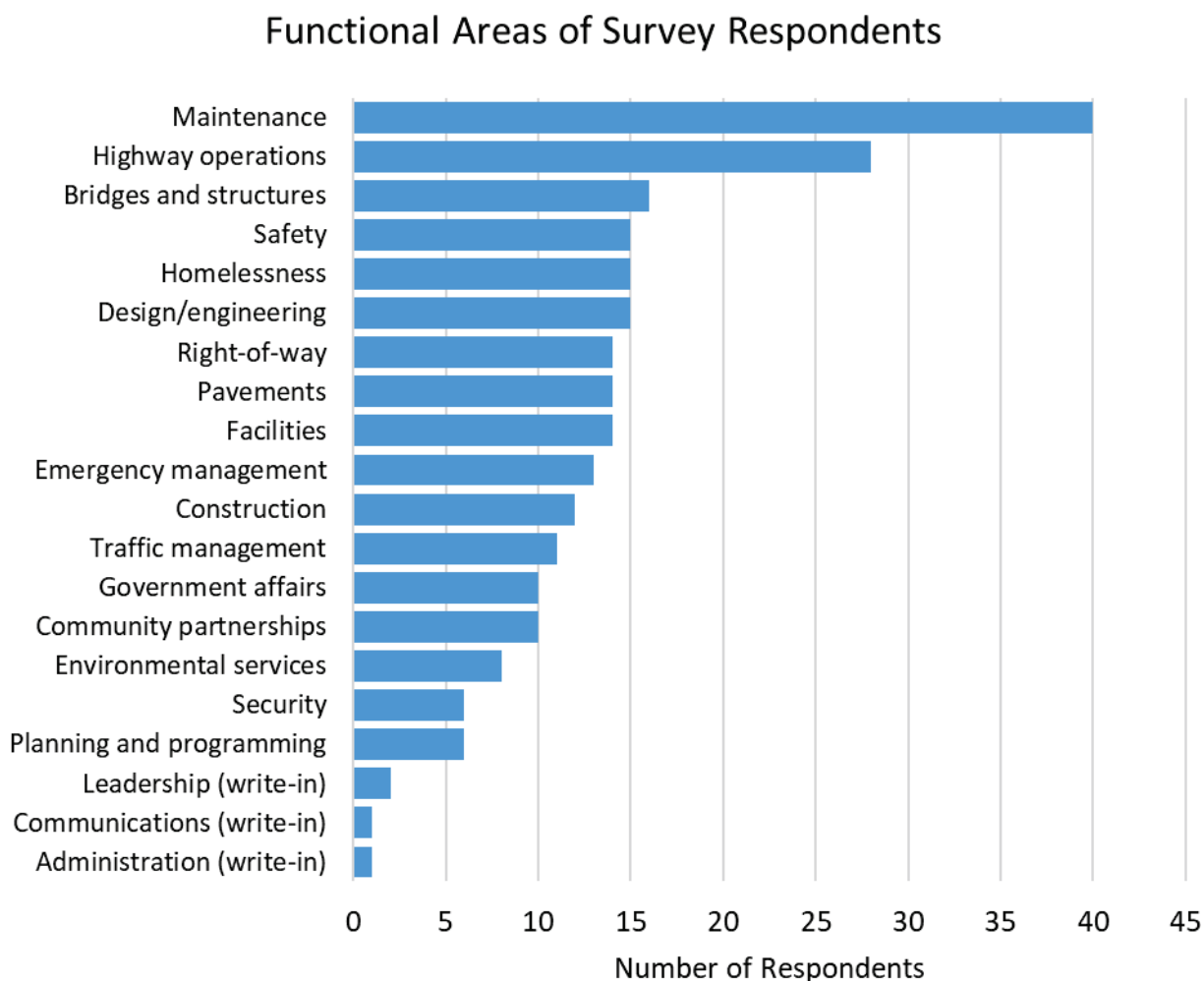
The survey was distributed to members of the following AASHTO committees: the Council on Highways and Streets, the Committee of Bridges and Structures, the Committee on Maintenance, and the Committee on Safety. Recipients of the survey were asked to fill out the survey or to forward the survey to the person best suited to answer questions related to the topic and the DOT's activities. In a couple cases, the state DOT chose one individual to respond for the agency. The survey was distributed to 646 DOT staff contacts representing all 50 state DOTs. Of these original contacts, 37 responded to the survey, for a response rate of 5.6%. We received an additional 34 responses from people who were not on our original mailing list and had the survey forwarded to them. Overall, we received 71 usable responses. We had at least one response from forty-three state DOTs, or 86% of state DOTs. The following DOTs did not respond to the survey: Alabama, Delaware, Nevada, New Jersey, New York, Rhode Island, and Vermont.

In some instances, we report findings by number of respondents. In others we report findings by states. In some instances, people from one DOT may have answered questions differently. Without being able to externally validate the answers, we erred on the side of caution when sharing findings.

Staff were asked what functional area they represented or their work areas. Respondents could check more than one functional area, and many did. Maintenance staff represented the largest number of responses (40) with highway operations being the second most responses (27). Functional areas with 10 or more respondents included Bridges and Structures, Safety, Homelessness Activities, Design/engineering, Right-of-Way, Pavements, Facilities, Emergency Management, Construction, Traffic management, Governmental affairs, and Community Partnerships. Figure 2 shows the functional areas represented by the respondents.



Figure 2. Functional Areas of Survey Respondents



Notes on Figure 2: n = 69. One respondent could select multiple functional areas.

## Survey Results

### Challenges face by DOTs

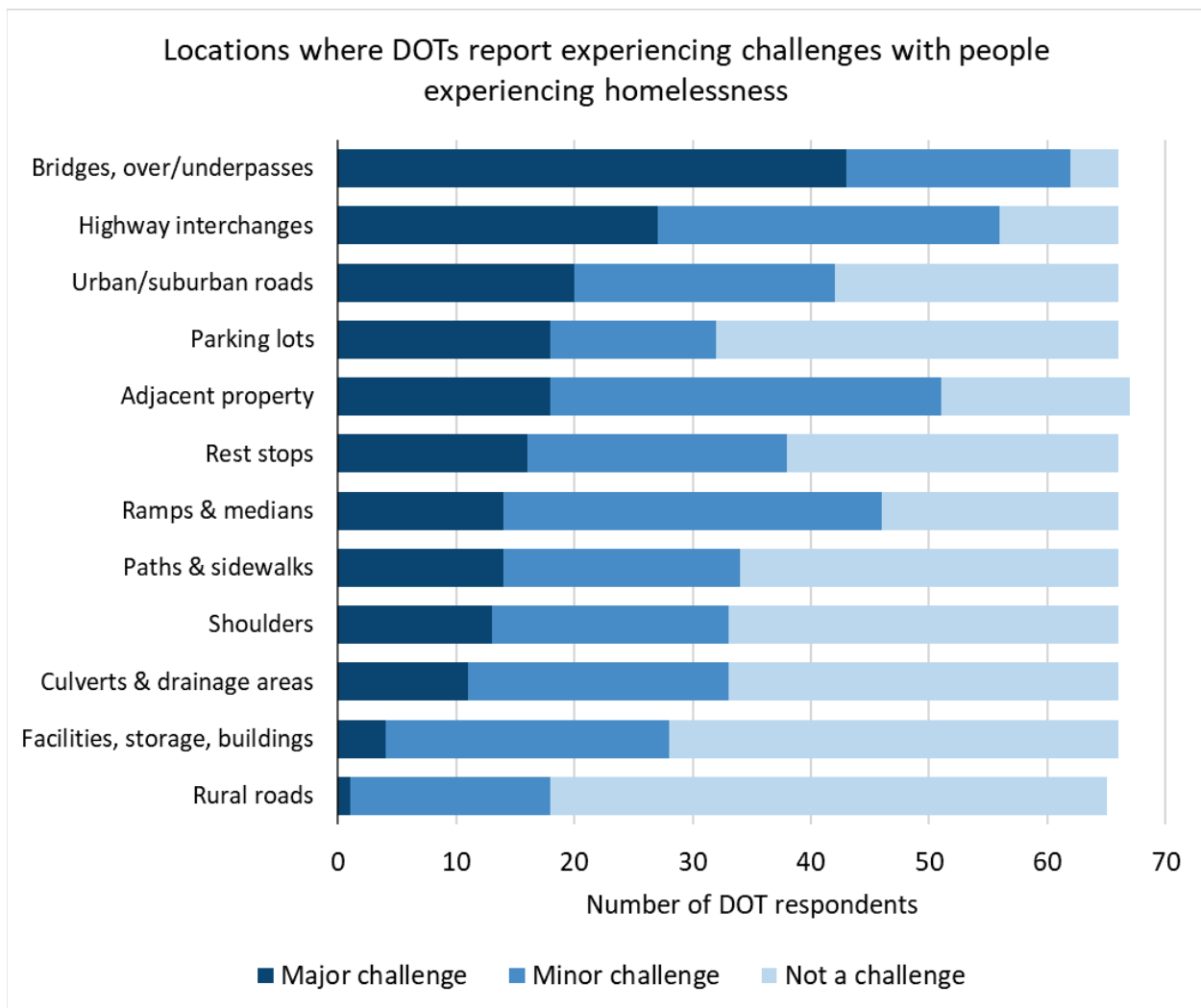
The survey asked respondents about where on state ROWs their DOT has experienced challenges with people experiencing homelessness (see Figure 3). Respondents could indicate a given location presented a major challenge (a consistent issue that expends time, resources, funds and/or that impacts operations), a minor challenge (an occasional issue that impacts operations or requires resources) or did not present a challenge. Of the 66 survey respondents to this question, 43 respondents reported impacts of homelessness on bridges and over/underpasses as a major challenge and 19 reported it as a minor problem. Highway interchanges and urban/suburban roads also emerged as problematic areas, with 20 or more respondents reporting those areas presented a major challenge. Some locations, such as DOT-adjacent property (including wooded areas) or ramps and medians were not rated as the sites of major challenges but were frequently identified as sites of minor challenges. The least

challenging areas, according to respondents, were DOT facilities and storage areas and rural roads – however, they still presented minor challenges in a handful of DOTs.

Across the functional areas of respondents, bridges were consistently ranked as the most challenging location, and interchanges were the second most challenging location.

Across multiple text responses, eight respondents mentioned bridges as a problematic location, four specifically noting fire damage to bridges, others noting that they are a common place people pitch tents/construct temporary shelters.

*Figure 3. Locations where DOTs report experiencing challenges with people experiencing homelessness*

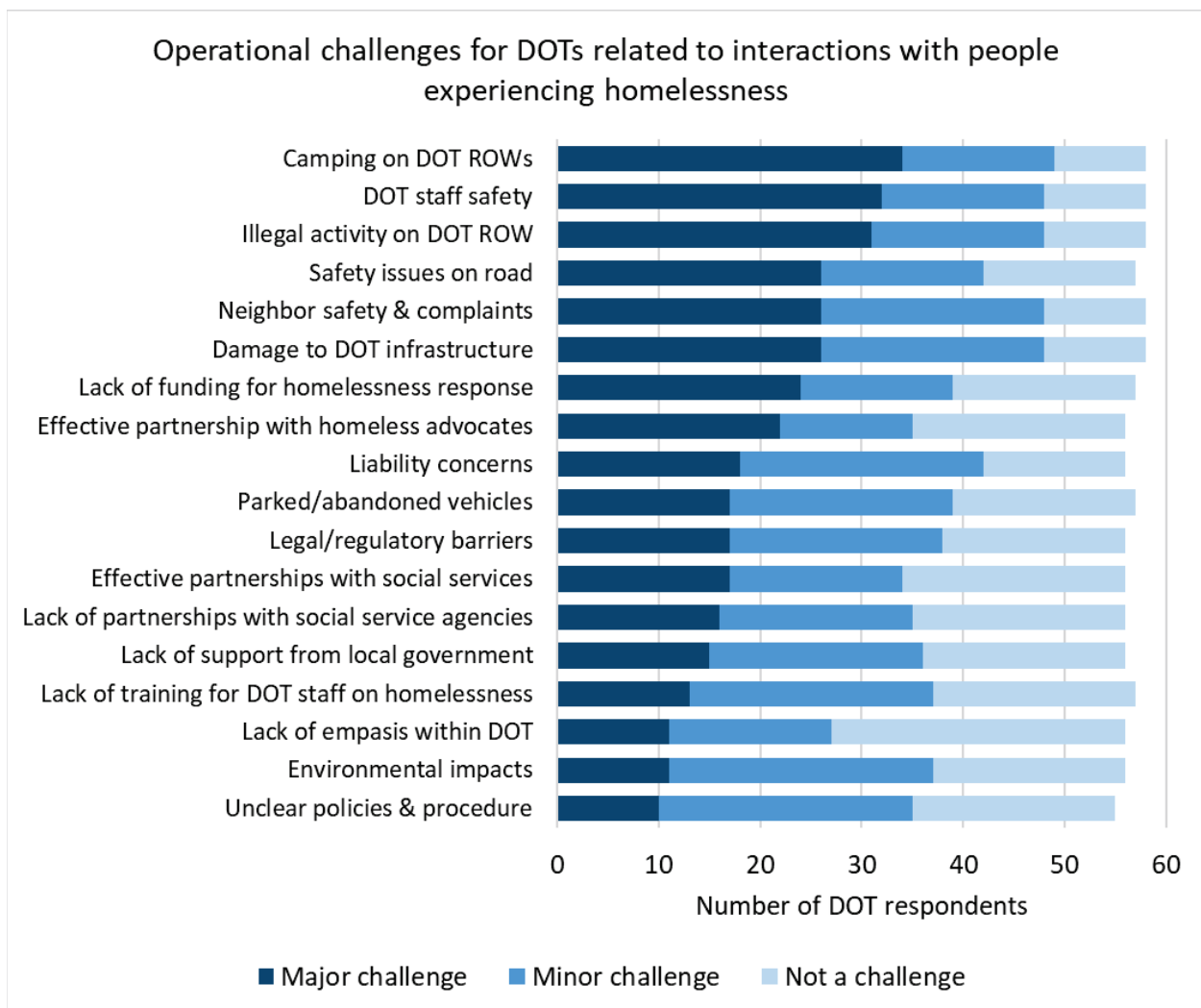


Note on Figure 3: n = 67.

DOTs were also asked about operational challenges related to people living on ROWs. The top issues, according to DOT respondents, were camping on DOT rights-of-way and at facilities, illegal activity on DOT ROWs and at facilities, and concerns about DOT staff safety, safety of

neighbors, and roadway safety (see Figure 4). Less-challenging issues included lack of emphasis within the DOT (11 people indicated major challenge), environmental impacts that might interfere with environmental regulations (11 people indicated major challenge) and unclear policies and procedures (10 people indicated major challenge). With a few exceptions, staff across functional areas listed camping on DOT ROWs, DOT staff safety, and illegal activity as the top operation challenges– the same as the overall operational challenges. For example, bridge staff ranked DOT staff safety and damage to DOT infrastructure as the top challenges, whereas highway operations staff list camping on the DOT ROWs and illegal activity on DOT ROW as top challenges, while security staff list lack of funding as their top challenge.

*Figure 4. Operational challenges for DOTs related to interactions with people experiencing homelessness*

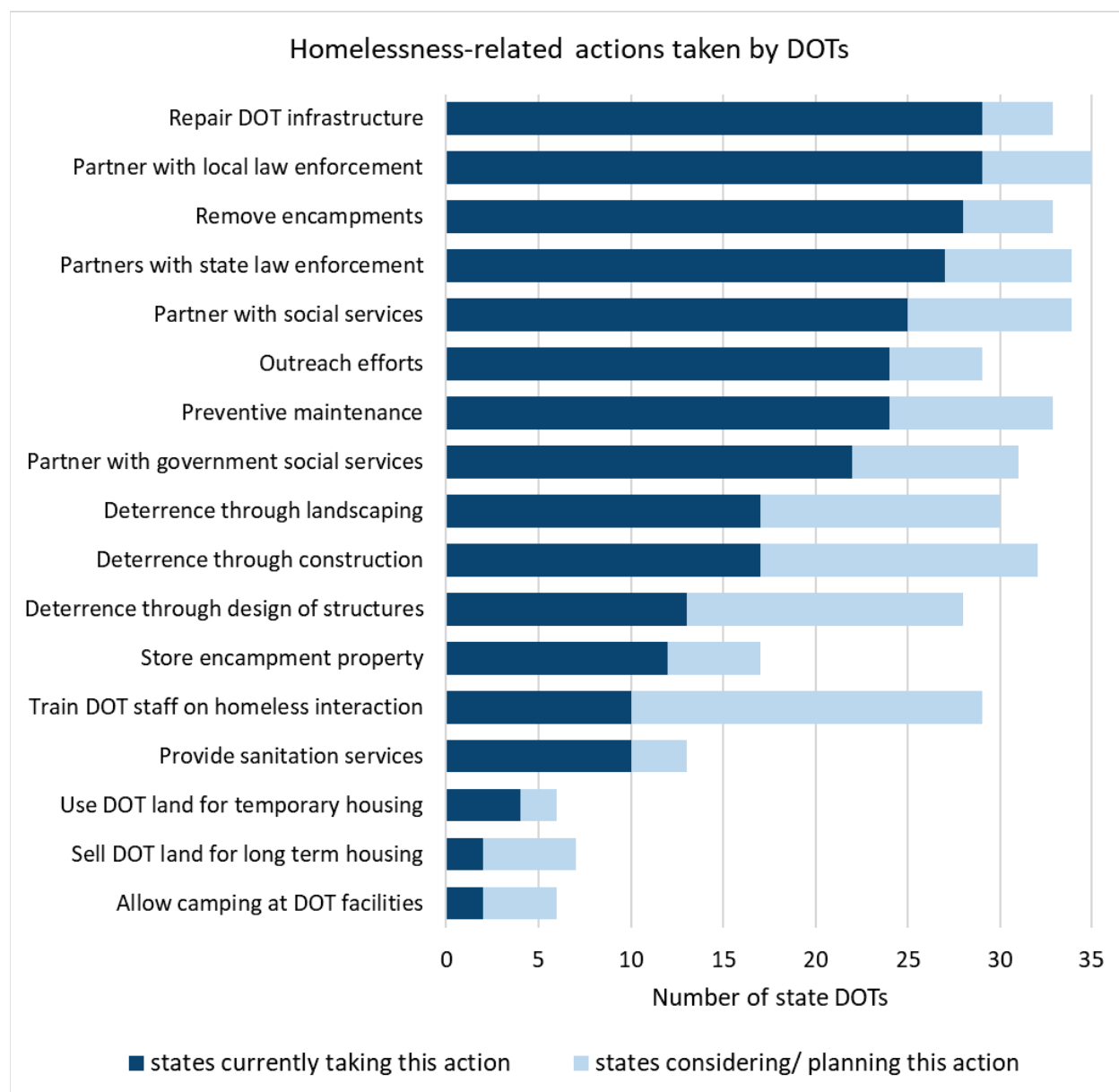


Note on Figure 4: n = 58

## **Actions Taken by DOTs**

DOTs were asked about the actions they have taken, are taking, or are considering in response to unauthorized encampments on their property. The most popular actions DOTs are currently taking to address homelessness on ROWs are repairing DOT infrastructure (29 states), partnering with state or local law enforcement (29 states), and removing encampments (28 states). Overall, partnerships seemed popular: partnering with government social services or housing agencies was selected by 22 of the 38 states who are represented among responses to this question, and partnering with nonprofit social services or law enforcement were selected by even more states. The least commonly selected current actions were those related to shelter and housing: only four states indicated they currently use DOT land for very short-term shelter, just two indicated they were currently using, leasing, or selling DOT land in order to build longer-term shelter or housing, and only two stated they currently allow overnight camping at DOT facilities. In terms of future activities, training DOT staff on interacting with people experiencing homelessness was selected most frequently (19 states), as were activities to deter camping through design of structures, construction, or landscaping.

Figure 5. Homelessness-related actions taken by DOTs



Notes on Figure 5: n = 38 states. A state could be both currently taking and planning/considering a given action.

### Practices Related to Encampments

In asking DOT staff about their practices involving sweeps and encampment removals on DOT ROWs, staff representing 28 DOTs stated removing encampments was a current practice, and staff representing 5 DOTs said they are considering or planning action related to sweeps. Overall, removal of a specific encampment was largely driven by complaints from neighboring properties, internal DOT staff, or a partner organization or other organization; only three DOTs (California, Indiana, and Minnesota) stated their agency has a formal prioritization criterion to evaluate sites for removal. A couple DOTs mentioned they had a process but didn't provide any

specific details. For example, Ohio DOT stated they work with specific local municipalities in a formal working group that establishes priorities. Individuals representing 27 DOTs shared information regarding the procedures for conducting removals of encampments. Six respondents uploaded specific policies, procedures, and guidance documents.

After an encampment has been vacated, the DOTs described using a range of practices to mitigate the recurrence of an encampment. These practices included removal of vegetation, securing the area with fencing (if practical), monitoring sites, hardscaping and posting signs in the area. Two respondents shared design guidance documents from their DOTs. The DOTs that responded to the question reported differing experiences around recurrence of encampments: some DOTs reported that encampments always recur at the same location after they are cleared, while others reported encampments never or rarely recur at the same location after they are removed. Respondents stated that encampment recurrence is often location based and that some DOT infrastructure makes it easier to prevent recurrence than others.

DOTs did respond that they do have design guidelines to prevent unauthorized access to areas or prevent encampments. A majority of the responses stated that the DOT had guidance for bridges, tunnels, overpasses and underpasses (15) and highway interchanges (10). Eight DOTs indicated that they had guidelines for shoulders or adjacent road ROW. In detailed responses, these practices mostly focused on fencing and barriers to disallow unauthorized access. Additional practices mentioned are using specific vegetation and hardscaping areas to prevent camping.

Fifteen DOTs indicated that outreach efforts to the unhoused population at the camping site always occur as part of an encampment clearance or sweep. An additional 11 DOTs said that outreach efforts sometime are part of an encampment clearance and only one DOT said outreach did not usually occur as part of an encampment clearance. Six DOTs provided specific examples, policies, and agreements with social service providers. Eight DOTs described formal and informal relationships with outreach providers, other local and state agency coordination or general practice in engaging people experiencing homelessness. These partnerships include local and other state agencies, law enforcement, and specific social and housing providers and non-profit organizations.

## **Internal DOT Activities**

Eight DOTs provided information on the type of training that is provided to DOT staff or is required by contractors. The training ranges from Hazmat and safety while cleaning to de-escalation and conflict management to general training related to homelessness and engaging with people on DOT property.

Fourteen DOTs stated the DOT had staff tasked with coordinating homelessness response across the agency or in certain regions. Four DOTs had staff who conduct direct outreach to people experiencing homelessness as their primary job. Finally, six DOTs have staff who liaise on housing policy with other government agencies.

Some DOTs, notably California, Oregon, Texas, and Washington, collect data related to homelessness. These data range from number and location of encampments, number of removals and cost of removal clean-ups, and number of individuals connected to social and

housing services. Six DOTs stated they participated and collaborated on the annual regional point-in-time count of people experiencing homelessness. Twenty-six DOTs estimated the approximate annual amount spent on issues related to homelessness and/or encampments. The estimates ranged from \$100,000 for states like Iowa and Maine to \$4-6 million for Hawai'i, Oregon and Washington. California was the highest at \$25 million. Many DOTs mentioned that they did not specifically track dollars spent on these activities and that the figures were just estimates.

## Documents Collected

DOT respondents were given the option to upload documentation describing formal prioritization criteria their organization used to decide which encampments to remove and were later asked to upload or weblink any DOT policies, practices, procedures, or documentation on homelessness. We received 10 documents from nine states. Six documents described procedures for encampment removal, two documents were reports on homelessness and the DOT, and two documents were design guides. In addition to those 10 documents, we received a training video and a link to an encampment removal policy that is currently under revision and cannot be viewed.

## Key takeaways

- A majority of DOT respondents report challenges related to people experiencing homelessness camping on ROWs and other DOT property.
- Twenty-eight DOTs (out of 38 who responded) reported working to remove encampments on ROWs.
  - Few DOTs have formal criteria that help prioritize certain encampments for removal.
  - DOTs cooperate with other agencies when removing encampments, such as law enforcement, social service providers, or hazmat/environmental contractors
  - Many respondents noted that removing encampments is rarely a permanent solution, and they frequently return to the same site or a nearby site.
- Several DOTs have design or maintenance practices intended to discourage access to and camping on DOT property and ROWs.
  - Examples of design practices include using steep slopes under bridges, minimizing areas with ledges or areas to sleep, hardening slopes with concrete, no longer allowing bulb-outs in certain locations and minimizing and securing open space in single-point urban interchanges (SPUI).
  - Examples of maintenance practices include clearing vegetation, adding rocks/riprap, and patrolling sites after encampments have been cleared.
- About a third of DOTs have staff dedicated to homelessness. These include staff who conduct direct/frontline outreach to people experiencing homelessness, staff who coordinate homelessness response across the agency, and staff who liaise on housing policy.

- DOTs have developed or indicated that they are planning on implementing training on homelessness.
- DOT staff expressed a need for guidance documents related to best practices for deterring or removing encampments and want partnerships with other organizations to help them address encampments and homelessness on ROWs.

## 2. Continua of Care (CoC)

### *Methodology*

In December 2023, we administered a survey to the 385 continua of care. The purpose of the survey was to learn about the relationship between Continua of Care (CoCs) and their DOTs. CoCs were asked about the prevalence of homelessness on public lands in their CoC, DOT responses to homelessness in the CoC, and the relationship between the CoC and the DOT. The survey was emailed out December 1st, and respondents received a reminder email December 12th. See Appendix D for survey instrument.

Thirty-six CoCs responded to the survey (and an additional CoC responded via e-mail and told us it had no contact with its DOT). While just 9.3% of the total number of CoCs, we received a range of responses in terms of CoC population size and climate/geographic areas. Fourteen respondents chose not to disclose their CoC. They did report the population size of the largest population hub in their jurisdiction. When they reported their CoC name, we identified their state as represented in some capacity as seen in the map below.

*Figure 6. Map of CoC Locations by State*

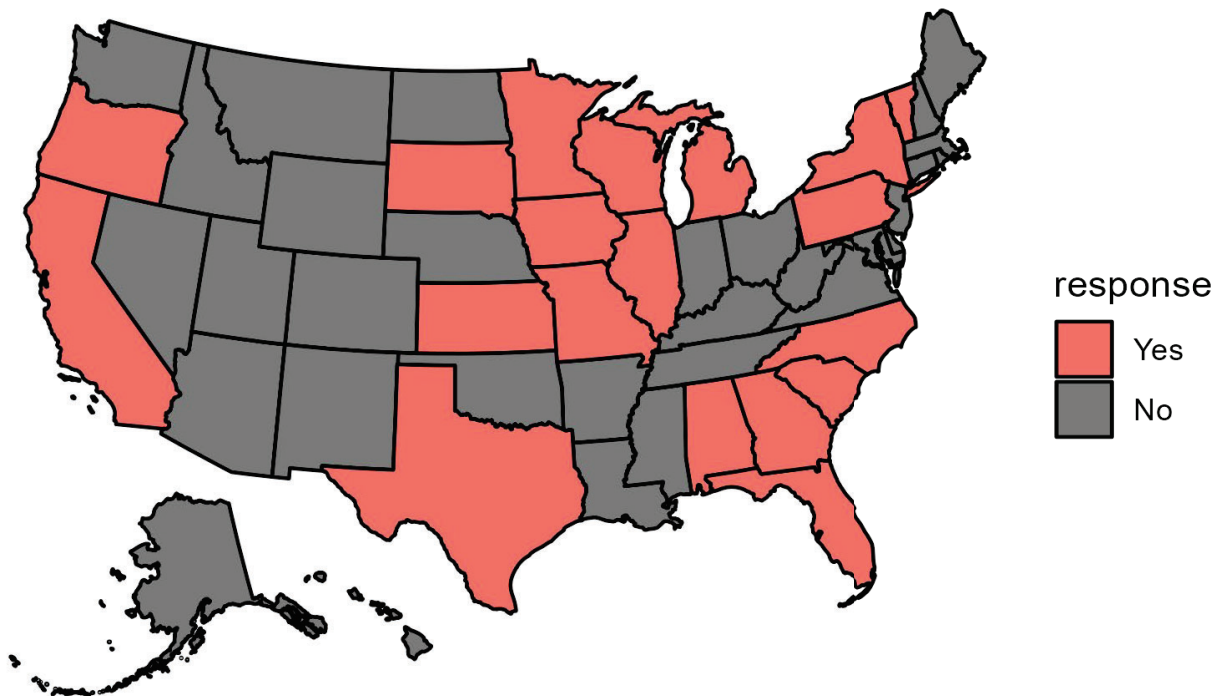




Figure 7. Number of Respondents by Population of CoC

Population of CoCs Largest Urban Area	Number of Respondents
Under 2,500 residents	0
2,500 to 9,999 residents	0
10,000 to 49,999 residents	4
50,000 to 99,999 residents	6
100,000 to 499,999 residents	17
500,000+ residents	7
Not sure	1
NA	2

Note on Figure 7: n = 33

## Findings

Of the 37 respondents, 33 reported that people experiencing homelessness live on or routinely use public lands in their CoC. The estimated number of such individuals varied by CoC: 14 respondents estimated fewer than 100 people living on public lands in their CoC, 13 respondents estimated 101-500 people, five respondents estimated 501-1000 people, and only one respondent estimated over 1000 people. Respondents were also asked to indicate which locations they observed people living on or using public lands. The most commonly selected locations were parks/woods/natural open spaces; bridge/overpass/road; and street/sidewalk, with 75% or more of respondents indicating that individuals lived at those locations. Respondents were somewhat less likely to indicate that individuals were living in plazas/town squares or waterways, though nearly 50% of respondents still indicated individuals experiencing homelessness used those locations. Write-in responses to this question include parking lots/park and rides and train stations and bus shelters.

Respondents were asked to identify actions their DOTs take in response to people experiencing homelessness on their public lands. CoCs reported observing DOTs removing encampments and upgrading infrastructure to discourage camping. A third of respondents reported not knowing what actions their state DOT was taking to address homelessness on state ROWs.

Figure 8. State DOT responses to homelessness, as observed by CoCs

Does the State DOT...	Selected
Provide access or connections to social services	6
Allow the use of structures or land to offer shelter	2
Provide or allow sanitation services	0
Allow encampments or not enforce camping bans on DOT land	5
Use a priority system to identify encampments for removal	5
Remove encampments with notice	12
Remove encampments without notice	4
Upgrade infrastructure to discourage camping	9

Have an office within the DOT that coordinates homelessness response	4
Participate in cross-agency planning for responding to homelessness	7
Don't know	12
Other	5

Note on Figure 8: n = 35

Survey respondents were asked about the CoC's relationship and interactions with the state DOT. Of the 36 CoC respondents, 13 indicated that, to the best of their knowledge, their state DOT had contacted their CoC about people living on DOT land. 18 CoCs said they had not been contacted by their DOT regarding this issue, and three CoCs said they did not know. When asked to rate how important working with the state DOT was compared to other priorities in the CoC, two respondents said it was not at all important, 22 said slightly important or moderately important, and seven said very important or extremely important. And, as shown in the table below, few respondents indicated that their CoC routinely worked with the state DOT. Only three respondents indicated they meet regularly with DOT staff, and only seven report regularly attending interagency meetings at which the DOT is present. Taken together, the answers to these questions do not suggest tight cooperation between DOTs and CoCs.

Figure 9. CoC and DOT Collaborative Actions

Possible action	Selected
Help remove encampments from DOT land	7
Observe DOT interactions with people experiencing homelessness	3
Send staff to sweeps, independent of DOT	9
Offer shelter to people experiencing homelessness on DOT lands, independent of DOT	5
Fund CBOs to support DOT homelessness-related activities	0
Fund DOT homelessness-related programs	0
Meet regularly with DOT staff member	3
Attend interagency meetings with DOT staff	7
Don't know	6
N/A	9
Other	7

Note on Figure 9: n = 35

The survey closed by asking respondents two open-ended questions: one about challenges they experienced when working with their DOT, and one soliciting advice on how DOTs could best respond to homelessness on their properties. CoC respondents observed a wide variety of challenges. One common theme was related to DOT organizational structure and personnel. For instance, five of 26 CoC respondents noted they had no clear point of contact in the DOT, or that they had to work with a different DOT staff person each time they were contacted. Similarly, four CoC respondents noted that DOT staff often lacked training in interacting with people experiencing homelessness, and that it could be a challenge to educate DOT employees about resources available in their community. The bureaucratic DOT structure was also mentioned as a difficulty (five respondents), as was unclear jurisdiction/ responsibility (two respondents) and poor DOT/CoC communication (three respondents).

CoC provided a variety of advice for DOTs dealing with homelessness on their properties. Most of it revolved around communication, collaboration, and coordination. Of 26 respondents, seven wanted better communication with their DOTs, both generally and around sweeps. Eight respondents advised DOTs to collaborate with homeless services providers around outreach and sweeps, and seven respondents wanted DOTs to coordinate with CoC or other services providers on outreach efforts. Relating to challenges identified in the previous questions, two CoC respondents advised the DOT to employ dedicated homelessness staff or staff knowledgeable about homelessness, and three advised establishing a consistent point of contact for CoCs and homelessness response staff. Seven CoC respondents stressed the importance of providing notice to encampment residents and/or allowing for outreach before the encampment was removed.

#### Key takeaways

- 95% of CoC respondents indicate that people experiencing homelessness in their CoC live on routinely use public lands
- CoCs and DOTs do not often work closely, and many CoC respondents reported not knowing who at the DOT they would approach to begin a conversation on homelessness on ROWs
- Related, when advising DOTs on how best to address homelessness on ROWs, CoC respondents recommended communication, collaboration, and coordination with the CoC or other homeless services providers

# Chapter 5: Task 2 - Integrated New and Existing Practices

In this section we summarize the new and existing practices identified by the various data sets. Then we present our synthesis of those practices.

## 1. Task 1a - Literature Review Practice Summary

In the literature review, we identified a mixture of both “push” and “pull” activities (See Figure 10), most commonly encampment removals.

*Figure 10. Strategies for Responding to Homelessness on DOT Land*

	<b>DOT Strategies</b>	<b>Strategies Taken by Other Governments or External Partners, with Applicability to or Lessons for DOTs</b>
“Push” Strategies	<ul style="list-style-type: none"> <li>• Clearance / displacement of encampments</li> <li>• No-trespass notices</li> <li>• Preventive maintenance (such as better securing/maintenance of locked bridge compartments)</li> <li>• “Defensive” architecture / hardscapes</li> </ul>	<ul style="list-style-type: none"> <li>• Clearance / displacement of encampments</li> <li>• Ticketing / monetary fines</li> <li>• Citations / arrests</li> <li>• “Defensive” architecture/hardscapes</li> </ul>
“Pull” Strategies	<ul style="list-style-type: none"> <li>• Accommodation of people / encampments in place</li> <li>• Arrangement for short-term shelter elsewhere</li> <li>• Arrangement of long-term housing elsewhere</li> <li>• Partnerships with homeless service providers to conduct outreach</li> <li>• Hiring a DOT staff coordinator or dedicated team for homelessness</li> <li>• Use of DOT land for building shelters</li> <li>• Sanctioned campsites on DOT land</li> <li>• Housing individuals in DOT-owned homes</li> </ul>	<ul style="list-style-type: none"> <li>• Specialized staff / teams with outreach expertise</li> <li>• Upkeeping encampments / providing amenities like toilets</li> <li>• Resources for mental health and substance abuse</li> <li>• Resource centers</li> <li>• Low-barrier shelters</li> <li>• Providing/connecting to housing opportunities</li> <li>• Coordination among a diverse set of partners</li> <li>• Temporary shelters / “tiny homes” on surplus / vacant land near freeways</li> <li>• Sanctioned campsites near DOT land</li> </ul>

*Note on Figure 10: Source: (Loukaitou-Sideris et al., 2023 and Wasserman et al., 2023)*

## 2. Task 1b - Industry Scan, New and Existing Practices

The industry scan confirmed practices from the literature review, as well as emphasizing different ones and identifying new ones.

### *Internal DOT Organization and Protocols*

Some DOTs, often facing the challenge of addressing a large number of encampments using limited resources, adopt a prioritization strategy for encampment removal. While there are differences in these DOTs' exact strategies, the prioritization is often based on a similar set of factors including health and safety risks for encampment residents, interference with traffic flow and risks of traffic accidents, damages to transportation infrastructure, and interference with scheduled construction and maintenance work. Few DOTs report formalized differences in approaches in rural, suburban, and urban areas. Two states (California and Hawai'i) reported special offices or headquarters staff within their agency that coordinate their response to encampments. Caltrans is creating an office to work with other bodies to prevent homelessness in the first place, through upstream interventions such as displacement protection around transportation projects and coordinated community investments.

### *Coordinated Outreach and Rehousing Efforts*

In addition to the internal strategies above, DOTs have also taken action with external partners to address homelessness. One, Project Off-ramp, was a coordinated rehousing effort in Fresno. Project Off-ramp was a partnership between the City of Fresno in central California, Caltrans, and California Highway Patrol to address homeless encampments along freeways during the pandemic. Through this project, individuals living in encampments were offered individual rooms in triage centers (temporary, low-barrier shelters adapted from a model from San Francisco, with pets, partners, and possessions allowed; no curfews; and intensive services), converted from motels and purchased by the City using federal pandemic relief money. The project had about an 80 percent acceptance rate (individuals living in freeway encampments accepting to be placed into the triage centers/temporary housing when encampments were cleared), a marked increase from before, and about a 50 to 60 percent safe exit rate (individuals exiting the triage centers into permanent housing).

Indiana DOT contracted with Horizon House, a homeless service provider, for outreach in the Indianapolis area. Under the contract, Horizon House is responsible for conducting outreach and coordinating efforts among different service agencies on behalf of InDOT, when InDOT determines the need to clear an encampment in their right-of-way. This partnership has achieved some modest positive outcomes: between ten and 50 percent of individuals living in encampments that were engaged during outreach accepted help and were placed into temporary housing.

## *Use of and Services on DOT Land*

State DOTs are not only taking steps to place people experiencing homelessness in existing shelters and housing, but some are also creatively using their existing land for new shelters or for servicing campsites and encampments. Multiple DOTs are leasing land, sometimes at no cost, to other government entities to create alternative shelter (Alternative shelter is the term used to refer to non-congregate shelter buildings.). It tends to be developed in a way that is faster to put up and breakdown, often requiring little to no significant maintenance. Alternative shelter may include pod villages, tent encampments, and safe parking sites.

TxDOT has created probably the most developed example of an alternative shelter location, which was one part of a larger collaborative effort. With an estimated 300 to 500 unhoused people living under or by I-35 in downtown Austin, in 2017, the TxDOT started convening a series of workshops. These brought together state, county, and local elected officials and government departments; nonprofits, religious organizations, and service providers; business groups; and more as part of the Austin District Initiative to Address Homelessness. In 2019, the governor and the state Departments of Public Safety, Emergency Management, and Transportation established a sanctioned campsite, the Esperanza Community, on TxDOT land. State and local agencies provided security, food, restrooms, and bus service to the site, while nonprofit partners offered medical and mental health care and housing and services assessments. Eventually the site was upgraded from a campsite to an ADA-compliant village, which is now expanding. Over 170 people have moved from the Esperanza Community to permanent housing.

### 3. Task 1c - Surveys

The surveys provided useful information about how DOTs are responding to homelessness, and how CoCs are working with DOTs.

Key takeaways from the DOT survey follow:

- Twenty-eight DOTs (out of 38 who responded) reported working to remove encampments on ROWs
  - Few DOTs have formal criteria that helps prioritize certain encampments for removal
  - DOTs cooperate with other agencies when removing encampments, such as law enforcement, social service providers, or hazmat/environmental contractors
  - DOTs have strategies to prevent recurrence of encampments, such as removing vegetation, adding fencing, or patrolling the site
- Several DOTs have design or maintenance practices intended to discourage access to and camping on DOT property and ROWs
  - Examples of design practices include using only steep slopes under bridges and hardening slopes with concrete, and no longer allowing bulb-outs and SPUI interchanges

- Examples of maintenance practices include clearing vegetation, adding rocks/riprap, and patrolling sites after encampments have been cleared
- About a third of DOTs have staff dedicated to homelessness. These include staff who conduct direct/frontline outreach to people experiencing homelessness, staff who coordinate homelessness response across the agency, and staff who liaise on housing policy
- Very few DOTs indicated that they currently allow DOT land to be used for camping/ temporary shelter, or for longer term housing
- Roughly 1/3 of DOT respondents indicate that they are planning on implementing training on homelessness
- Roughly 1/4 of DOT respondents are planning on changing their design practices, physical structures, landscaping, or maintenance practices to discourage camping, sleeping, and/or access
- DOT staff expressed a need for guidance documents related to best practices for deterring or removing encampments, and want partnerships with other organizations to help them address encampments and homelessness on ROWs

The CoC survey key takeaways include:

- 95% of CoC respondents indicate that people experiencing homelessness in their CoC live on routinely use public lands
- CoCs and DOTs do not often work closely, and many CoC respondents reported not knowing who at the DOT they would approach to begin a conversation on homelessness on ROWs
- Related, when advising DOTs on how best to address homelessness on ROWs, CoC respondents recommended communication, collaboration, and coordination with the CoC or other homeless services providers

## 4. Task 2 - Total Integrated New and Existing Practices

Many DOTs engage in several practices when responding to unsheltered homelessness on their land. These practices can be grouped together as:

- Removing unauthorized encampments
- Preventing and mitigating unauthorized encampments
- Using DOT land to support people experiencing homelessness
- Creating internal organizational structures to address unsheltered homelessness

### *Removing Unauthorized Encampments*

When responding to unsheltered homelessness, the most consistent practice undertaken by DOTs is removing unauthorized encampments. Across these DOTs, there are several consistent activities that DOTs conduct. DOTs often develop engagement protocols to assess encampments and prepare to remove them. Internal and external partnership plays a key role in effectively and ethically removing encampments, including the development of protocols and



long-term planning to facilitate camp removal and resident relocation. These partners may include law enforcement and social service providers. DOTs use fencing and other structures, vegetation or vegetation removal, and post “no trespass” signs to deter people from returning to encampments.

Some DOTs develop prioritization criteria to determine which encampments should be removed first. For instance, from survey responses, Minnesota categorizes encampments as emergency (requires immediate clearance), high impact (24-hour notice), medium impact (24–48-hour notice), or low impact (monitored, but removal is size-/complaint-driven). Indiana also has a prioritization system with emergency and non-emergency categories; non-emergency encampments may not need to be removed, and if so, notice of removal is required. California also has two tiers: priority level 1 (Critical Priority for Expeditious/Urgent Removal) and Priority Level 2 (Removal Needed). Priority Level 1 situations exist when “an encampment poses an imminent threat to life, health, safety, or infrastructure and must be immediately addressed.”

There are some common steps that DOTs take when a camp has been selected for removal. First, DOTs will notify the campers of site removal, either verbally or in person, and tell them when the site will be cleared by. Second, DOT staff or external partner organizations will conduct outreach to help camp residents identify places to relocate. Third, DOT and/or external partner staff will return to the site and remove any remaining campers. Often, law enforcement is involved in this step. Law enforcement may also help ensure nothing dangerous or hazardous remains or may encourage or arrest remaining residents. Fourth, DOT staff or subcontractors will remove any garbage/hazardous waste/debris. The site is then repaired and secured. Additional steps DOTs might include in their protocols include follow-up visits to the sites or recording the site after the camp clearing. The timelines that this process takes varies by DOT.

Unauthorized encampments that are not prioritized for removal may receive outreach support with the goal of helping people find housing or relocate to other shelters. They may also be monitored to determine if their prioritization ranking changes.

### *Internal Organizational Work*

DOTs take multiple, internal actions to support their activities when addressing homelessness. They develop interagency collaborative spaces to share information and identify roles and responsibilities. These roles can include determining who will monitor sites, developing mitigation strategies across functional areas, and identifying who will liaise with external partners. As described above, nearly all DOTs responding to homelessness clear encampments. Their internal coordination work produces the protocols for camp removal. A few DOTs provide training to their staff members interacting with people experiencing homelessness. DOTs also, to some degree, track their progress and effectiveness in reaching their goals. This monitoring and evaluation may include program spending, how well mitigation strategies prevent people from returning to camp sites, and the number of people who move into shelter or housing. Sixteen states reported having dedicated staff or offices working on homelessness responses.

## *Utilizing DOT Land*

DOTs are also using their property to help respond to unsheltered homelessness. We found instances of DOTs designating property for temporary camping or as safe parking lots. These sites may include sanitation services. There are a handful of examples of DOTs using their property to develop shelters such as pod villages or camps. In one instance, a DOT provided existing housing to people experiencing homelessness. Recent federal guidance and funding could make it easier for DOTs to use existing, unused property to participate in the development of affordable housing through transit-oriented development (U.S. Interagency Council on Homelessness, 2023).

## *Design, Maintenance, and Construction Practices*

Across design, maintenance, and construction needs, we found that there was synergy about the areas most impacted by encampments and the damage being done to DOT ROWs, which could be significant. There were fewer specific practices reported. As seen in Figure 10, here are some examples of maintenance, design, and construction activities—e.g. “defensive” architecture and hardscaping practices, such as fencing, signs, and vegetation management to deter unauthorized use or access. Some DOTs have also altered locations, such as spaces under bridges or underpasses, by, for instance, placing large boulders to block access to areas. The existing literature and other findings, however, did not highlight many examples of design or construction practices to minimize use or access to rights-of-way and infrastructure. In most cases, the guidance given for design, maintenance, and construction practices is broad, given the need to account for the context and needs of a given site.

### **Design**

As most encampments have been located in pre-existing locations, there have been limited practices developed for new projects. For instance, we did not identify bridge design manuals that say to include a specific kind or size of riprap on underpass ROWs. Examples of design practices include using steep slopes under bridges, minimizing areas with ledges or areas to sleep, hardening slopes with concrete, no longer allowing bulb-outs in certain locations and minimizing and securing open space in single-point urban interchanges (SPUI). Many of these designs are also used when cleaning up and maintaining sites.

### **Construction**

When construction was discussed in conjunction with homelessness, the response was consistent across the board. Construction sites are secured, and there is no tolerance of encampments. Fencing is often used to achieve this. The reasons for securing the sites included safety and liability issues.

### **Maintenance**

The bulk of the actions of this type DOTs are taking in response to homelessness encampments are in the area of maintenance. These activities focus on what happens after an encampment is removed. Fencing may be installed, as well as riprap and other hardscaping. Bridge compartments may be locked, if not locked before. Arizona DOT usually uses wire fencing in

rural locations to deter encampments and chain-link fencing in urban locations. We found no discussion about pavement practices specifically in the academic/gray literature review, industry scan, nor DOT survey, but pavement was raised as an area of concern and damage. Protecting pavement is tied to preventing and resolving encampments.

# Chapter 6: Task 3 - Detailed Work Plan for Phase II

## 1. Work Plan Overview

The Phase 2 detailed work plan includes three tasks to gather more detailed information to develop the guide and final report products. These tasks include specific DOT focus groups/interviews (5a), functional area focus groups (5b), and site visits (5c). A universal activity for each of the three tasks will be to obtain institutional review board (IRB) approval from PSU and UCLA.

### *Task 5a. DOT Focus Groups*

The purpose of the focus groups or interviews is to gain insights into specific DOTs practices and approaches related to people experiencing homelessness on their rights-of-way. We will conduct 9 DOT specific online focus groups.

We identified 9 DOTs to prioritize for focus groups. This list may change based on the interest or availability of the DOT, or varying needs of particular types of information.

We based on two sets of criteria our initial selection 2 sets of criteria.

First we identified interview sites—other than those chosen for site visits—based on:

- 1) Participation in survey;
- 2) Stating in the survey that they were interested in a follow-up interview or site visit;
- 3) Rating extent of homelessness on their properties at least three or higher, on a five-point scale

On the narrowed-down list, we then sought a set of DOTs that:

- 1) Reported issues/challenges, with a diverse group of geographic and infrastructure challenges;
- 2) Had been conducting several activities/taking multiple actions; or, reported on an innovative project such as a pilot project.

We initially envisioned needing a longer list of criteria; however, the above criteria narrowed down DOTs quickly.

Details about the sites are presented here in summary form (See Figure 11). See Appendix F for a full reporting of criteria for each responding DOT.

*DOTs Selected for Interviews or as Backup Interviewees*

Interview or backup	DOT	Sign. Of Camps	Encampment Policies	Design ated Staff	Bridge Issues	Notes	COC Connected w/DOT	US Region (Census)
Interview	Georgia	3.00	1	0	0	contacts with local services in each urban setting in Georgia	active DOT	South
	Hawaii	3.00	0	1	1	HDOT homeless coordinator, outreach conducted		HI/AK
	Illinois	3.50	1	0	1	Vertical wall abutments		Midwest
	Kentucky	4.00	0	0	1	MOA with city of Louisville, encampment "priority list"		South
	Missouri	4.00	1	1	1	Pilot project with business council who identifies encampments/ provide services/ does cleanup,		Midwest
	New Hampshire	4.00	0	1	1			Northeast
	North Carolina	3.00	1	0	0			South
	Washington	4.67	1	1	1	Bridge design direction	interested DOT collaboration	Pacific Northwest
	Arizona	3.00	1	1	1	Design changes (bridge and intersection)		Southwest
	Michigan	4.00	0	0	1	Sweep procedure	interagency coordination	Midwest
Backup Interview	Pennsylvania	4.00	0	1	1		interagency planning	Northeast
	Utah	3.50	1	0	1	Bridge design change		West

Our goal is to have a comprehensive understanding of their work. We will ask DOTs to identify people internal and external to the department to participate in a 1.5-hour focus group to discuss their responses to homelessness and encampments. Participants could include people working at any geographic scale, functional area, role, etc. We will notify sites of our particular interest in design, construction, and maintenance of pavements. External partners working with the DOT (municipal governments, service providers, law enforcement, etc.) will also be encouraged to participate; we will obtain their contact information from DOT contacts and online. The recruitment e-mail and discussions will be sent to the NCHRP program officer and the panel for review.

The focus groups will be conducted over Zoom, recorded with permission, transcribed using transcription software, and thereafter analyzed and grouped for key themes, lessons learned, successes, obstacles, etc. Below is a sample of the type of questions we hope to ask. We will tailor the questions to what the research team has reviewed beforehand about the specifics of each DOT's programs. We also anticipate asking follow-up questions on particularly illuminating or unclear responses as needed.

### **Selected Potential Questions**

- Where do encampments typically occur? In what types of settings or areas? How large or small are they, and how much do they differ over time and location? What effect has the pandemic had?
- What are the most significant challenges for your department related to homelessness?
- What are the specific impacts to design, construction, and maintenance work? What, if any, are the impacts of homelessness on pavement?
- Does your department partner with any other agency or external partner to respond to homelessness? Localities? Law enforcement agencies? Non-profits? Other public agencies?
- Does your department conduct sweeps or enforcement actions or work with other agencies that do so on your property?
- If so, how do you prioritize the sites at which you conduct such actions?
- How does your department repair sites once they are cleared, and who does that work? What specific mitigation practices do you undertake? How do you repair and maintain pavements?
- Does your department conduct outreach efforts? What staff and/or partners do you employ or collaborate with for these efforts?
- Does your department have policies or guidelines for addressing homelessness? Do you train your staff on how to do so?
- On state rights-of-way in major cities, how does your department interact with city governments' homelessness initiatives and ordinances? Does your department follow the lead of localities or do you lead efforts yourself? Do local ordinances on homelessness apply to your rights-of-way?

- Does your department collect any data on homelessness, and how often? What kind of data? Counts? Reports/complaints?
- How much do you spend annually on issues relating to homelessness? For what type of actions/responses do you use these funds?
- How do you measure success? Have your programs proven successful?
- We'd also like to get feedback with respect to prospective new practices. How effective would [new practice] be in addressing homelessness in your area? How likely is your DOT to adopt that strategy? What do you see as being the main barriers? Any thoughts on how to address those barriers?

### ***Task 5b. Functional Area Focus Groups***

After reviewing findings, particularly from the survey, we propose three further focus groups, these based on functional work areas across many DOTs. These groups would include:

1. Design
2. Construction and management of construction sites
3. Maintenance

Given that most survey respondents identified multiple functional work areas and that those functional areas could include various practices, we believe that thematically based focus groups will provide more robust insights and sharing of knowledge into these areas of practice. As identified in the literature review, these areas have had less formal study. We also received limited information about pavement in the survey and believe these focus groups will help us better understand the impacts and any associated practices related to pavement.

Focus groups will last 1.5 hours. We plan on recruiting six to ten individuals for each group from a diverse set of DOTs. Participants for the focus groups will be recruited via e-mail from the survey distribution list. The recruitment script will be sent to the survey participants who indicated that they would be interested in a follow-up interview or site visit. Respondents would be given the option to participate in any of the three focus groups and could participate in more than one. The recruitment e-mail and discussions will be sent to the NCHRP program officer and the panel for review.

The focus groups will be conducted over Zoom, recorded with permission, transcribed using transcription software, and thereafter analyzed and grouped for key themes, lessons learned, successes, obstacles, etc. Below is a sample of the type of questions we hope to ask. We also anticipate asking follow-up questions on particularly illuminating or unclear responses as needed.

### **Design, Construction, and Maintenance Questions**

- What issues do encampments and unauthorized access cause for maintenance, construction, and system operations?
- Does your department modify physical structures to discourage encampments? If so, how?



- How does your department decide where to install additional design elements to dissuade unauthorized access or camping?
- Have the design standards and/or typical materials/designs changed across the department in response to homelessness issues? If so, how?
- What are the advantages and disadvantages of different access restriction structures/elements: fences, boulders/rocks, etc.
- How much does your department spend on defensive design and access control efforts?
- Do your protocols for design, construction, or maintenance reflect issues of homelessness? If so, how?
- How are design, construction, and maintenance workers and contractors trained?
- Do you involve law enforcement, service providers, or other partners during construction and maintenance efforts?
- How does your department approach the management of roadways and pavements in relation to encampments? Is your approach different from other infrastructure, such as bridges and interchanges?
- Ask about prospective new practices, as above.

### ***Task 5c. Site Visits***

We will conduct four site visits to where DOTs are responding to homeless encampments.

### **Selection Criteria**

We developed a list of criteria to identify four sites. The criteria list includes:

- 1) Participation in survey
- 2) Stating in the survey that they were interested in a follow-up interview or site visit
- 3) Rating extent of homelessness on their properties at least three or higher, on a five-point scale
- 4) Established policies and practices, highlighted in the survey or information gathered in our industry scan
- 5) Diversity in geographic locations

### **Identified Sites**

Based on these criteria, we propose visiting sites in the following states:

- Minnesota (Twin Cities)
- Indiana (Indianapolis and New Albany/Jeffersonville)
- Texas (Austin)
- California (location(s) to be determined in consultation with Caltrans staff and partners)

Figure 12 summarizes key DOT facts. For more details about the state DOT, see Appendix F.

Figure 12. Site Visit DOTs

DOTs	Census region	Camping an Issue on RW	Formal Prioritization Criteria	Staff focused on Homelessness	Notes
California	West	4.67	1	1	Caltrans district encampment coordinators
Indiana	Midwest	3.00	1	1	Formal agreement with Horizon House homeless services provider, frequent meetings, intensive outreach
Minnesota	Midwest	4.00	1	1	Weekly meetings with cities, counties, gov agencies
Texas	South	4.00	0	1	Esperanza community

Together, these locations span the range of environments and challenges faced by state DOTs in responding to homelessness: large and small states, states in different parts of the country, locations in different climates, large and small cities—as well as areas outside of urban areas, relatively higher and lower housing costs, and areas each with documented challenges with homelessness and encampments on DOT lands but with very different per-capita levels of homelessness and of unsheltered homelessness. The DOTs in each of these states are taking innovative but different responses to homelessness (each discussed at various points in the chapters above). And the political and legal environment of these states differ widely with respect to homelessness. Three of the locations have local activities of interest to the study but are also the location of the state DOT’s headquarters.

Most importantly, not only did staff from each of these DOTs respond to the survey and indicate their interest in hosting a visit, but staff at each also responded eagerly and promptly to us on the possibility of working with us on a site visit. We are confident in their ability to be responsive, insightful partners in both the research work and any necessary site visit logistics.

These particular sites offer a number of advantages. Minnesota DOT (MnDOT), the first to develop formal prioritization criteria, promises insight into cold-climate responses. The research team developed connections with Texas DOT (TxDOT) staff in planning for and presenting a session on homelessness and transportation at the 2024 TRB Annual meeting; TxDOT’s Esperanza Community, described in Chapter 3, is also a particularly robust model to study. Caltrans has an impressive set of strategies it is currently deploying, including a large tranche of new state funding for encampment clean-up, the establishment of state and district homelessness coordination offices/staff, and coordinated rehousing programs. A case study in California also offers the potential to visit and compare multiple areas within the state, such as the Central Valley versus Northern or Southern California. The UCLA research team has deep connections within Caltrans and with external organizations across the state and will be

presenting at Caltrans' Encampment Training Academy—itself another unique aspect of the DOT's homelessness responses—in April. Indiana DOT allows us to review DOT's approaches working in both urban and rural locations with social service providers. Meanwhile, Minneapolis and Indianapolis offer examples of homelessness in (at least comparatively) lower-cost housing markets, while California and Texas are emblematic of homelessness trends in higher-cost areas like the West Coast and parts of the Sunbelt, respectively.

## **Conducting Visits**

The site visits will involve interviews and on-location observation. Member(s) of the research team will work with DOT staff to schedule and execute a comprehensive tour and briefing on the department's homelessness response. This may include discussions with front-line or relevant back-office staff and an accompanied tour of encampment locations or other places of interest on the highway right-of-way (potentially during an outreach and/or removal operation). We will also plan to meet with the local government agencies and external partners who work with the DOT.

To create a holistic understanding of the DOT's work, we will interview relevant staff members from social services organizations and a CoC if there are none working as part of the DOT external network. Questions to these entities will probe their perception of homelessness on public ROWs, identify barriers to coordination, and share ways to collaborate.

Lastly, we interview people who have or are recently experiencing homelessness on DOT ROWs themselves. Speaking with people with lived experience of homelessness allows us to understand how and why people ended up living on the ROW, what their interactions have been with DOT and partner staff, and what would help them move from ROWs.

Formal interviews will be recorded. When appropriate photos will be taken, emphasizing examples of practices that have mitigated or repaired site damage. Field notes will be taken during briefings and tours.

Our team will be on site for approximately two business days.

## **Analysis**

The materials collected during the site visit will be analyzed upon return from the site. Interviews will be transcribed. Thematic analysis will be conducted with the interviews, photos, and field notes. Summaries from each site will be written. The goal will be to provide in-depth descriptions of the sites as well as identifying commonalities and differences across the sites.

## ***Task 6. Webinar and Presentation Materials***

We will develop a webinar and a set of presentation materials on the work completed to share with DOTs. This webinar and presentation will incorporate recommendations and information around equity, especially racial equity; safety concerns; legal issues; cross-agency coordination; and internal management practices.

The webinar will provide an overview of the project and its outcomes and will provide guidance on the use of the guide. Both the webinar and the presentation will describe the goals, methodology, and outcomes of the project. The webinar material will align with and supplement guide content, with a focus on action-oriented recommendations for best practices in addressing homelessness on state DOT rights-of-way and in the design, construction, and maintenance of pavements, bridges, facilities, and other property. The target audience for the webinar is upper-level management or individuals charged with implementing programs to address issues of homelessness for state DOTs, especially developing policies and practices related to encampments.

The webinar will also be discussed in the Technical Memo: Implementation of Research Findings and Products. The project team will work with TRB to develop and schedule the webinar. The webinar will be scheduled after the guide has been produced, to offer maximum usability to the DOTs.

The presentation will be formatted in PowerPoint or another widely usable format and will be designed for clarity when distributed separately from a webinar or in-person talk.

### *Task 7. Final Guide and Reports*

Based on the information gathered in Phase 1 and during Phase 2, the team will develop the final guide and report. The final guide will be developed in accordance with the Procedural Manual for Contractors Conducting Research. Below is the draft outline of the Guide for Addressing Encampments on State Transportation Rights-of-Way.

The recommendations in the guide will be based on the findings from the literature review, surveys, interviews, and site visits, and the final guide will support DOT staff and practitioners. We will update the outline based on feedback from the panel and the work completed at the site visits and the interviews with DOTs and the focus groups described in Task 5.

In support of producing a final document that is comprehensive and accessible, during our Task 5 interviews with agency staff, we will explore what information they would like to see in the guide and how the information should be presented for maximum usability.

The Implementation of Research Findings and Products technical memorandum will also be developed and submitted as a final product. A draft outline of the implementation plan is provided below.

#### **A. Draft outline of the Guide for Addressing Encampments on State Transportation Rights-of-Way**

1. Introduction
  - a. Overview of the project
  - b. How to use the guide

## 2. Part 1: Primer

- a. Overview of homelessness in the United States
  - i. To include causes, statistics, service systems, and information about related government funding
- b. Homelessness in DOT rights-of-way
  - i. Summary of key findings (e.g., where people choose to camp, hazards, barriers to ending homelessness)
  - ii. Summary of challenges (to people experiencing homelessness, DOT workers, other partner staff, roadway users, infrastructure, etc.)
- c. Overview of social equity, environmental impacts, safety, legal and other issues related to homelessness and DOT activities
  - i. Explain the complexity of homelessness and how it brings together a disparate set of issues
  - ii. Reference insights gleaned from prior and current work
  - iii. Homelessness as a complicated problem and the implications for DOTs in addressing the impacts
- d. Overview of implementation drivers for successful development and implementation of programs and practices (e.g., staff training, leadership, internal policies such as those that can minimize the impact of responding to homelessness on DOT staff).

## 3. Part 2: Guide of Suggested Practices

- a. Introduction and overview of current and emerging practices
  - i. Summarize key current and emerging practices as it relates to DOT activities and functional areas within state DOTs
- b. Engaging with people experiencing homelessness
  - i. Understanding the fundamentals of engaging with people experiencing homelessness
  - ii. Identifying and working with external organizations at the agency level to create partnerships
  - iii. Planning approaches for engagement and response
  - iv. Determining staff and stakeholder roles and responsibilities
  - v. Developing and implementing a training program
  - vi. Tracking current condition, progress, and cost
- c. DOT Responses to encampments - suggested tools and best practices
  - i. How to develop an engagement protocol and policies, including partners, decisions about notifications, protocols for doing it, legal issues in states, etc.
  - ii. How to develop prioritization criteria for determining encampments for removal

- iii. Suggestions for coordinating with external partners, including developing agreements and policies
- iv. Developing steps in addressing and removing encampments
  - 1. Determining site for removal
  - 2. Engagement with individuals and posting notice
  - 3. Outreach to individuals at the site
  - 4. Removal of property and items at site, including protocol for storing items
  - 5. Repair, restoration and securing site
- v. Strategies and practices for restoration and securing sites
- d. Components to consider for (Authorized) Shelters or Campsites on DOT land
  - i. Sanitation facilities
  - ii. Authorized temporary camping and parking
  - iii. Safe rest villages
- e. Design and construction practices important for DOTs related to this topic
- f. Overview of current and emerging approaches
- g. Design practices to prevent access and encampments
  - i. Bridges, interchanges, and ramps
  - ii. Pavements, roadways, and ROW
  - iii. DOT facilities
- h. Construction practices to prevent access and encampments of construction sites
- 4. Part 3: Conclusions and Supporting Materials
  - 1. Conclusions
  - 2. References
  - 3. Acronyms and Abbreviations
  - 4. Appendix: Tools and Resources

## **B. Draft outline of Implementation Plan - “Implementation of Research Findings and Products”**

The Implementation of Research Findings and Products technical memorandum will identify recommendations for the implementation of research findings and products following the conclusion of NCHRP 20-129. The technical memorandum will be based on the template (Version 110119) provided in the Procedural Manual for Contractors Conducting Research.

The memo will identify:

- (a) recommendations on how to best put the research findings/products into practice;

(b) possible institutions that might take leadership in applying the research findings/products;

(c) issues affecting the potential implementation of the findings/products and recommended possible actions to address these issues; and

(d) methods of identifying and measuring the impacts associated with the implementation of the findings/products.

## **1. Objective of the Implementation Plan**

Research objective: The objective of this research is to develop a guide of suggested practices for responding to, managing, and deterring encampments on the ROWs. The suggested practices shall address the challenges for state DOTs in the design, construction, and maintenance of pavements and consider social equity, environmental impacts, safety, legal issues, coordination with other agencies, and other relevant issues.

Anticipated product: The main product of the research is a guide entitled *Guide for Addressing Encampments on State Transportation Rights-of-way*.

Target audience: The target audience for the guide is upper-level management or individuals charged with implementing programs to address issues of homelessness for state DOTs.

Implementation Leadership Team: A group of organizations and/or individuals will be suggested to help in the dissemination and continued application of the research products.

## **2. Implementation Description**

The technical memorandum will include information outlining strategies for dissemination and application of the guide, immediate actions that may be completed as a part of the project, and longer-term actions that may be taken following the completion of the project. The implementation plan will address the approaches under the following sections:

1. Recommended Methods to Facilitate Implementation: Example methods include e-mail distribution/newsletters, presentations and conference, webinars, social media, and networking with industry stakeholders.
2. Possible institutions/partners and their potential implementation role.
3. Potential impediments to successful implementation.
4. Metrics to measure the extent of product use and its benefit.



## Chapter 7: Conclusion

Through Phase 1 research, we identified DOTs responding to homelessness in different capacities. Most focus on removing and mitigating encampments. Some have more robust protocols than others. Internal organization and external partnerships with entities such as law enforcement and social service organizations play an important role in developing responses.

While most DOTs reported damage to DOT infrastructure, including pavements and bridges, we found fewer practices that specifically addressed these issues. Those identified practices warrant further research and evaluation.

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# Appendix A: Selection of Key Studies Related to State DOTs and Homelessness

Keyword	Author	Title	URL	Publication Year	Description / Abstract	Applicability to NCHRP 20-129
Strategies	Wasserman, Jacob L.; Loukaitou-Sideris, Anastasia; Ding, Hao; and Nelischer, Claire	"The Road, Home: Challenges of and Responses to Homelessness in State Transportation Environments" ( <i>Transportation Research Interdisciplinary Perspectives</i> , Vol. 21C)	<a href="https://doi.org/10.1016/j.trb.2023.100890">https://doi.org/10.1016/j.trb.2023.100890</a>	2023	This study synthesizes existing literature and findings from interviews with staff from 13 state DOTs and eight service providers and organizations responding to homelessness. DOT staff employ both "push" and "pull" strategies, the most common of which is encampment removals ("sweeps"). However, the effectiveness of such removals is limited, as encampments often reappear in nearby sites. Other strategies include "defensive design" and, more proactively, establishing or partnering with low-barrier shelters, providing shelters and sanitation on DOT land, and coordinating rehousing and outreach efforts. The findings suggest that DOTs should acquire better data on homelessness on their lands, create a homelessness coordinating office, establish formal partnerships with nonprofits/service providers, and evaluate the necessity of encampment removals, through the development and utilization of prioritization criteria.	This paper summarizes the most recent understanding of the impacts of homelessness on state DOTs and the range of practices being used around the country, including both "push" and "pull" strategies. Other strategies include "defensive design" and, more proactively, establishing or partnering with low-barrier shelters, providing shelters and sanitation on DOT land, and coordinating rehousing and outreach efforts. The study suggests a range of practices DOTs could do, such as acquire better data on homelessness on their lands, create a homelessness coordinating office, establish formal partnerships with nonprofits/service providers, and evaluate the necessity of encampment removals, through the development and utilization of prioritization criteria.

Keyword	Author	Title	URL	Publication Year	Description / Abstract	Applicability to NCHRP 20-129
Strategies	Municipal Research and Services Center	<i>Regulation of Unauthorized Camping, Loitering, and Solicitation of Aid</i>	<a href="https://mrsc.org/explore-topics/planning/homeslessness/regulation-of-unauthorized-camping-loitering">https://mrsc.org/explore-topics/planning/homeslessness/regulation-of-unauthorized-camping-loitering</a>	2023	This webpage reviews some of the more common areas of regulation—unauthorized sitting, lying, or camping; using vehicles as habitation; soliciting aid; and loitering—and includes information on court decisions that impact a local government’s ability to create regulations addressing these areas.	Provides an overview of common regulations impacting people experiencing homelessness.



Keyword	Author	Title	URL	Publication Year	Description / Abstract	Applicability to NCHRP 20-129
Strategies	Loukaitou-Sideris, Anastasia, Wasserman, Jacob L.; Ding, Hao; and Nelischer, Claire	<i>Homelessness on the Road: Reviewing Challenges of and Responses to Homelessness in State Transportation Environments</i>	<a href="https://doi.org/10.17610/T6DC77">https://doi.org/10.17610/T6DC77</a>	2023	<p>This study synthesizes existing literature and findings from interviews with staff from 13 state DOTs and eight service providers and organizations responding to homelessness. Homelessness represents a recognized and common challenge for DOTs, but the numbers and location of unhoused individuals in state transportation settings vary and fluctuate. As DOTs face jurisdictional, financial, and legal hurdles in responding, DOT staff employ both “push” and “pull” strategies, the most common of which is encampment removals. However, the effectiveness of such removals is limited. Other strategies include “defensive design” and, more proactively, establishing or partnering with low-barrier shelters, providing shelters and sanitation on DOT land, and coordinating rehousing and outreach efforts. The findings suggest that DOTs should acquire better data on homelessness on their lands, create a homelessness coordinating office, establish formal partnerships with nonprofits/service providers, and evaluate the necessity of encampment removals, through the development and utilization of prioritization criteria. DOTs should coordinate with other bodies as they work towards broader housing solutions.</p>	<p>This report highlights the most recent understanding of the impacts of homelessness on state DOTs and the range of practices being used around the country, including both “push” and “pull” strategies. Other strategies include “defensive design” and, more proactively, establishing or partnering with low-barrier shelters, providing shelters and sanitation on DOT land, and coordinating rehousing and outreach efforts. The study suggests a range of practices DOTs could do, such as acquire better data on homelessness on their lands, create a homelessness coordinating office, establish formal partnerships with nonprofits/service providers, and evaluate the necessity of encampment removals, through the development and utilization of prioritization criteria.</p>



Keyword	Author	Title	URL	Publication Year	Description / Abstract	Applicability to NCHRP 20-129
Strategies	Loukaitou-Sideris, Anastasia; Wasserman, Jacob L.; Caro, Ryan; and Ding, Hao	"Unhoused on the Move: Impact of COVID-19 on Homelessness in Transit Environments" (in <i>Pandemic in the Metropolis: Transportation Impacts and Recovery</i> )	<a href="https://doi.org/10.1007/978-3-031-00148-2_3">https://doi.org/10.1007/978-3-031-00148-2_3</a>	2023	The limited capacity of shelters to meet the needs of many unhoused Americans is forcing many to turn to transit vehicles, bus stops, and transit stations for shelter. The pandemic only exacerbated the homelessness crisis. Fear of infection in shelters and reduced capacity due to physical distancing requirements drove more unhoused people to take shelter on the streets and also in transit settings. Although discussions in the popular media have raised awareness of homelessness in transit environments, the scale of the problem has not been well-documented in scholarly research. This chapter investigates the intersection of the pandemic, transit, and homelessness in U.S. cities, presenting the results of a survey of 115 transit operators on issues of homelessness on their systems, both before and during the coronavirus pandemic. The research finds that homelessness is broadly present across transit systems though mostly concentrated on larger transit systems and central hotspots, and it worsened during the pandemic. The challenges of homelessness are deepening, and dedicated funding and staff are rare. Attempting to respond to the needs of homeless riders, some agencies have put forth innovative responses, including hubs of services, mobile outreach, discounted fares, and transportation to shelters.	Chapter presents the UCLA Institute of Transportation Studies research on homelessness in public transit settings in the context of the COVID-19 pandemic, highlighting survey findings and case studies related to change since the onset of the pandemic

Keyword	Author	Title	URL	Publication Year	Description / Abstract	Applicability to NCHRP 20-129
Strategies	Loukaitou-Sideris, Anastasia; Wasserman, Jacob L.; Ding, Hao; and Caro, Ryan	“It Is Our Problem!": Strategies for Responding to Homelessness on Transit" ( <i>Transportation Research Record: Journal of the Transportation Research Board</i> , Vol. 2677, Iss. 2)	<a href="https://doi.org/10.1177/03611981221111156">https://doi.org/10.1177/0361198122111156</a>	2023	This study seeks to understand how transit agencies are responding to them. Based on interviews with staff members and partners at 10 different transit agencies and on program performance data, where available, the research provides detailed case studies of four sets of strategies taken in response to homelessness on transit systems: hub of services, mobile outreach, discounted fares, and transportation to shelters. The researchers analyze each strategy's scope, implementation, impact, challenges, and lessons learned. They may differ depending on the context, need, and available resources. The researchers find value in transit agencies fostering external partnerships with social service organizations and other municipal departments and keeping law enforcement distinct from routine homeless outreach. The paper also underlines the key need for funding from other levels of government to allow transit operators to adopt, expand, and refine homelessness response programs.	Presents UCLA Institute of Transportation Studies case study interview findings on homelessness on public transit. Major findings and strategies potentially applicable for/adaptable by DOTs as well.
Encampments	National Academies of Sciences, Engineering, and Medicine	<i>Encampments of Unhoused Individuals in Transportation Rights-of-way: Laws and State DOT Practices</i>	<a href="https://doi.org/10.17226/26739">https://doi.org/10.17226/26739</a>	2022	NCHRP LRD 87 documents the laws, statutes, cases, procedures, policies, and other resources governing or addressing 1) a transportation agency's prevention or removal of unsheltered encampments from transportation rights-of-way; 2) the authorized use of transportation rights-of-way for shelters for unhoused individuals and social services to assist transportation agencies in addressing safety, health, and public welfare issues; and 3) the ability of transportation agencies to control their rights-of-way. Also, this digest	Overview of the laws and regulations pertaining to encampments in the right-of-way for state DOTs and cities.

Keyword	Author	Title	URL	Publication Year	Description / Abstract	Applicability to NCHRP 20-129
Foundational	Ding, Hao; Loukaitou-Sideris, Anastasia; and Wasserman, Jacob L.	"Homelessness on Public Transit: A Review of Problems and Responses" ( <i>Transport Reviews</i> , Vol. 42, Iss. 2)	<a href="https://doi.org/10.1080/01441647.2021.1923583">https://doi.org/10.1080/01441647.2021.1923583</a>	2022	Comprehensive literature review published in the journal <i>Transport Reviews</i> identifying articles discussing different aspects of homelessness in transit systems. The authors reviewed 63 articles to characterize the extent of homelessness in transit systems, the travel patterns of unsheltered individuals and the importance of transit to them, and responses to homelessness from transit operators. The authors found limited information characterizing the extent of the challenge and concluded that lack of knowledge may hinder targeted policy responses. The literature shows that public transit is important for those experiencing homelessness. Lastly, the few studies included on responses to homelessness point to most transit agencies employing both punitive and outreach strategies.	Published literature review on homelessness in transit systems emphasizing the importance of transit services for unhoused individuals as a common mobility option and critical public good and that the responses of most transit agencies involve both punitive and outreach strategies. There is a growing awareness that punitive, law-enforcement response measures alone can only temporarily remove or displace homelessness. Outreach efforts by transit agencies are critical to offering assistance and support.

Keyword	Author	Title	URL	Publication Year	Description / Abstract	Applicability to NCHRP 20-129
Foundational	Wasserman, Jacob L.; Loukaitou-Sideris, Anastasia; Ding, Hao; and Caro, Ryan	"A Bus Home: Homelessness in U.S. Transit Environments" ( <i>Journal of Planning Education and Research</i> )	<a href="https://doi.org/10.1177/0739456X221121612">https://doi.org/10.1177/0739456X221121612</a>	2022	Journal article presenting findings from the survey of 115 U.S. and Canadian transit operators that inquired about homelessness on transit systems. The research finds that homelessness is broadly present, though more concentrated on central hotspots, and worsened during the pandemic. In response, transit agencies often initiate a combination of punitive and outreach strategies. Based on the findings, the researchers argue for better data collection, establishment of policies and protocols, engagement in outreach strategies, and partnering with service providers.	Presents UCLA Institute of Transportation Studies survey findings on homelessness on public transit, disaggregated between a national survey and a California survey. Major findings potentially applicable for DOTs as well.
Strategies	Huslage, Melody; Cronley, Courtney; Roark, Erin; and Scoresby, Kristel	"How to Spend the Newly Dedicated Public Transportation Funding: Investigating Transportation Access among Individuals Experiencing Homelessness" ( <i>Journal of Social Distress and Homelessness</i> )	<a href="https://doi.org/10.1080/10530789.2022.2127884">https://doi.org/10.1080/10530789.2022.2127884</a>	2022	The study explores perceived difficulty accessing transportation among persons experiencing homelessness in two communities, one with and one without a public bus system. Researchers administered a survey of 164 individuals. A high percentage of participants reported finding it difficult or very difficult to cover the cost of transportation, get places quickly, find transportation, and find transportation at night and on the weekends. Residents in the community lacking public transit scored statistically significantly higher difficulties than the community with public transit.	Study speaks to the importance of the transportation network to unhoused people and their difficulty using it. It makes a case for how to spend new transportation investment funds to assist with homelessness.

Keyword	Author	Title	URL	Publication Year	Description / Abstract	Applicability to NCHRP 20-129
Foundational	Flaming, Daniel; Orlando, Anthony W.; Burns, Patrick; and Pickens, Seth	<i>Locked Out: Unemployment and Homelessness in the COVID Economy</i>	<a href="https://doi.org/10.2139/ssrn.3765109">https://doi.org/10.2139/ssrn.3765109</a>	2021	This report uses estimates from the Congressional Budget Office to project an unemployment scenario for the pandemic recession. The report also uses detailed unemployment and homeless data from the 2008 Great Recession to estimate the linkage between unemployment and homelessness and forecast the amount and type of pandemic-driven homelessness in Los Angeles, California and the United States. Characteristics of workers who are more vulnerable to economic fluctuations and the risk factors that make them vulnerable are described.	Report estimates unemployment as a result of the COVID-19 pandemic and forecasts the accompanying homelessness in Los Angeles, California and the United States. The report also describes a pilot initiative called the Realization Project which uses comprehensive employment intervention in preventing persistent homelessness.
Strategies	Loukaitou-Sideris, Anastasia; Wasserman, Jacob L.; Caro, Ryan; and Ding, Hao	<i>Homelessness in Transit Environments Volume II: Transit Agency Strategies and Responses</i>	<a href="https://doi.org/10.17610/T6JK5S">https://doi.org/10.17610/T6JK5S</a>	2021	Research report by the UCLA Institute of Transportation Studies which describes the extent of homelessness on transit in several metropolitan areas using count data and provides detailed case studies of strategies (hub of services, mobile outreach, discounted fares, and transportation to shelters) taken by agencies in response to homelessness in transit.	Study conducted during the COVID-19 pandemic that sought to quantify the scale of homelessness on transit through counts and to document measures and strategies taken by transit agencies to address homelessness. The study finds value in collecting data more systematically, fostering external partnerships, keeping law enforcement distinct from routine homeless outreach, educating the public, and training transit staff.

Keyword	Author	Title	URL	Publication Year	Description / Abstract	Applicability to NCHRP 20-129
Foundational	Bernhardt, Maxwell and Kockelman, Kara	"An Analysis of Pedestrian Crash Trends and Contributing Factors in Texas" ( <i>Journal of Transport and Health</i> , Vol. 22)	<a href="https://doi.org/10.1016/j.jth.2021.101090">https://doi.org/10.1016/j.jth.2021.101090</a>	2021	<p>Pedestrian crash rates and deaths have risen across the United States over the past decade, in contrast to motor vehicle traffic crash counts and rates. This study examines key factors for and countermeasures against pedestrian crashes, while predicting pedestrian crash rates per vehicle-mile traveled and walk-mile traveled (VMT and WMT). Crash data from Texas DOT's Crash Records Information System database were analyzed using an ordinary least-squares regression by controlling for a variety of socioeconomic, climate, and roadway design variables, including homelessness, which has emerged as a serious issue along freeway rights-of-way in many U.S. urban areas. At the county level in Texas, there is a moderately positive relationship between job density and pedestrian crash rates, but a practically significant and negative relationship with population density. Median income and homelessness have very practically significant, positive impacts on pedestrian crash and fatality rates. These results suggest significant positive relationships between pedestrian crash rates per VMT and per WMT with respect to household incomes and homelessness, at the county level. Pedestrian crashes and pedestrian deaths per WMT also reveal practically significant contributions by larger youth populations and poverty rates. A weaker but still practically significant relationship exists between crash rates per VMT and population growth rate, warranting further investigation on the relationship</p>	<p>The study found that "a one standard deviation increase in homelessness per 1,000 residents is associated with a +14.4% of one standard deviation rise in the total pedestrian crash rate per WMT at the county level, all else constant. Similarly, pedestrian crashes per WMT rise in a notable way with the share of children under age 17 and rates of homelessness." In other words, homelessness is significantly related to pedestrian crash and fatality rates.</p>

Keyword	Author	Title	URL	Publication Year	Description / Abstract	Applicability to NCHRP 20-129
Encampments	Dunton, Lauren; Khadduri, Jill; Burnett, Kimberly; Fiore, Nichole; and Yetvin, Will	Exploring Homelessness among People Living in Encampments and Associated Cost: City Approaches to Encampments and What They Cost	<a href="https://www.huduser.gov/portal/sites/default/Exploring-Homelessness-Among-People.pdf">https://www.huduser.gov/portal/sites/default/Exploring-Homelessness-Among-People.pdf</a>	2020	<p>between exurban land use patterns and pedestrian crashes.</p> <p>This is the final report of a study commissioned by the U.S. Department of Health and Human Services and the U.S. Department of Housing and Urban Development. The report describes how some cities are responding to homeless encampments as of 2019, synthesizing findings from a literature review, telephone interviews with nine cities, and site visits to four cities. A major focus of the report is the strategies that Chicago, Houston, San José, and Tacoma were using to attempt to reduce the phenomenon of encampments and provide assistance to encampment residents and what those cities are spending on activities related explicitly to encampments.</p>	The report provides an overview on encampments in the U.S., including specific case studies that are using different approaches to reduce encampments.



Keyword	Author	Title	URL	Publication Year	Description / Abstract	Applicability to NCHRP 20-129
Encampments	Ricord, Samuel	<i>Impact of Homeless Encampments on State Department of Transportation Right of Way</i> (University of Washington)	<a href="https://digital.lib.washington.edu/443/researchworks/handle/1773/45911">https://digital.lib.washington.edu/443/researchworks/handle/1773/45911</a>	2020	This thesis looks to better understand DOT policy regarding homeless encampments along state rights-of-way as well as the policy of other agencies that interact with the DOT to address this pressing issue in a way that balances the safety of DOT employees and the equitable treatment of unhoused communities. Understanding the factors that influence how DOTs address homelessness is critical to finding the aspects of this process that can be improved to ensure the most positive outcome for all parties involved: the DOT, the local municipalities, and the unhoused community.	An overview of homelessness and encampments in state rights-of-way, with specific focus on Washington State
Foundational	Barile, John P.; Pruitt, Anna S.; and Parker, Josie L.	"Identifying and Understanding Gaps in Services for Adults Experiencing Homelessness" ( <i>Journal of Community and Applied Social Psychology</i> , Vol. 30, Iss. 3)	<a href="https://doi.org/10.1002/casp.2440">https://doi.org/10.1002/casp.2440</a>	2020	Research study examining self-identified service utilization and service needs of adults experiencing homelessness. The study found that individuals differ in their use and continued need of services depending on the reasons they identified as contributing to their homelessness. Additionally, the majority of respondents reported difficulty in accessing services and were most likely to use services in convenient locations and where they were treated with respect.	Study findings with implications on the development and dissemination of services to adults experiencing homelessness based on self-identified service utilization and service needs

Keyword	Author	Title	URL	Publication Year	Description / Abstract	Applicability to NCHRP 20-129
Enforcement	Batko, Samantha; Gillespie, Sarah; Ballard, Katrina; Cunningham, Mary; Poppe, Barbara; and Metraux, Stephen	<i>Alternatives to Arrests and Police Responses to Homelessness: Evidence-based Models and Promising Practices</i>	<a href="https://www.urban.org/research/publication/alternatives-arrests-and-police-responses-homelessness">https://www.urban.org/research/publication/alternatives-arrests-and-police-responses-homelessness</a>	2020	Report exploring non-punitive strategies to address homelessness among those people enduring unsheltered homelessness, as punitive responses are costly, ineffective, and can worsen the situation. The report reviews evidence of supportive approaches, including connections to housing, inclusive management of public space, and shifting the role of law enforcement.	Report reviewing evidence of non-punitive strategies to respond to people enduring unsheltered homelessness, including housing, inclusive public spaces, and alternative crisis response policies and practices. While evidence for some strategies is limited, the authors ascertain there are promising innovations that could improve outcomes.
Foundational	Batko, Samantha; Oneto, Alyse D.; and Shroyer, Aaron	<i>Unsheltered Homelessness: Trends, Characteristics, and Homeless Histories</i>	<a href="https://www.urban.org/research/publication/unsheltered-homelessness-trends-characteristics-and-homeless-histories">https://www.urban.org/research/publication/unsheltered-homelessness-trends-characteristics-and-homeless-histories</a>	2020	Report describing population trends, geographic trends, and characteristics (e.g., demographics, education, mental and behavioral health, etc.) of people enduring unsheltered homelessness. The number of people enduring unsheltered homelessness sharply increased between 2015 and 2019, with the growth concentration in West Coast cities and among populations that identify as women, Black, or Latino/a. Additionally, the report includes key comparisons between individuals experiencing unsheltered and sheltered homelessness. For instance, people enduring unsheltered homelessness are more likely to be disconnected from formal employment, have significant mental and behavioral health challenges, have involvement with the criminal legal system and experience homelessness for longer periods, when compared to people experiencing sheltered homelessness.	Report provides key summary trends and characterization of people enduring unsheltered homelessness (i.e., sleeping in places not meant for human habitat), including characteristic comparisons of people enduring unsheltered homelessness versus people experiencing homelessness in sheltered locations.

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Foundational	Loukaitou-Sideris, Anastasia; Wasserman, Jacob L.; Caro, Ryan; and Ding, Hao	<i>Homelessness in Transit Environments Volume I: Findings from a Survey of Public Transit Operators</i>	<a href="https://doi.org/10.17610/T6V317">https://doi.org/10.17610/T6V317</a>	2020	Survey by the UCLA Institute of Transportation Studies completed by 115 transit operators with the intent of determining the extent of homelessness in transit systems, challenges and concerns from the agencies, and responses (if any) to homelessness. The study found that homelessness is broadly present across systems, although concentrated in larger operators, and has worsened since the onset of the COVID-19 pandemic. Perceived challenges by operators are deepening while dedicated resources are limited. The authors did note that in a number of cases, external partnerships and outreach are increasing and adapting to conditions set by the pandemic.	Survey study conducted to investigate the extent of homelessness in transit systems in the United States. The survey, completed nationwide by 115 transit operators, sought to describe challenges, efforts, policies, and procedures aimed at addressing homelessness in transit systems.
Foundational	Moses, Joy; Chalmers, Aaron; Kelly, Tianna; and Yadeto, Mergitu	<i>Responding to COVID-19: Conversations with Homeless System Leaders</i>	<a href="https://enr.com/content/uploads/2020/08/Pro-mising-Practices-Pub-clean-with-logos-.pdf">https://enr.com/content/uploads/2020/08/Pro-mising-Practices-Pub-clean-with-logos-.pdf</a>	2020	Third report in a series highlighting homelessness during the COVID-19 pandemic. This report documents conversations held with 24 homeless continuum of care systems leaders in the United States as to how they are approaching housing placements, ensuring healthy conditions, data collection, staffing, partnerships, and common challenges throughout the COVID-19 pandemic. Several areas are implementing innovative practices, but they are yet to be formally evaluated.	This report summarizes responses collected through phone interviews with homeless continuum of care leaders throughout the United States. The report includes developing innovative practices being implemented by outreach workers and volunteers.

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Foundational	Paul, Dereck W.; Knight, Kelly R.; Olsen, Pamela; Weeks, John; Yen, Irene H.; and Kushel, Margot B.	"Racial Discrimination in the Life Course of Older Adults Experiencing Homelessness: Results from the HOPE HOME Study" ( <i>Journal of Social Distress and Homelessness</i> , Vol. 29, Iss. 2)	<a href="https://doi.org/10.1080/10530789.2019.1702248">https://doi.org/10.1080/10530789.2019.1702248</a>	2020	Research using grounded theory methodology to analyze in-depth qualitative interviews of persons experiencing homelessness. Two major themes within interviews with Black participants related to race were identified: participants experienced racial discrimination in early life, and structural racism precipitated and perpetuated adult homelessness. Additionally, the researchers identified sub-themes of structural racism that contributed to participants becoming or staying homeless: criminal justice discrimination, employment discrimination, exposure to violence, premature death, and limited family wealth.	Black persons are overrepresented among persons experiencing homelessness, but there is limited research examining the relationship between race and homelessness. This research found strong correlations between racial discrimination and homelessness, which may serve as targets for policies aimed at preventing homelessness.
Strategies	Rice, Eric; Treglia, Dan; Culhane, Dennis; Moses, Joy; Janosko, Jackie; Chalmers, Aaron; Kelly, Tianna; Schulenberg, Kristi; and Yadeto, Mergitu	<i>Community-level Responses of Homelessness Assistance Programs to COVID-19: Data from May 2020</i>	<a href="https://enr.org/content/uploads/2020/05/Community-COVID-Survey-5.28.2020-Final.pdf">https://enr.org/content/uploads/2020/05/Community-COVID-Survey-5.28.2020-Final.pdf</a>	2020	Report detailing the findings of a national survey of local homeless assistance coordinating agencies, or Continua of Care, to understand the impacts of COVID-19 and how communities were addressing the needs of persons experiencing homelessness. The survey was conducted by the National Alliance to End Homelessness in April 2020. The survey served to understand how communities responded to COVID-19 in the first four to six weeks of the crisis, including the need to implement social distancing practices. The survey results found that communities were prioritizing health and housing to the extent possible but with significant limitations.	National survey exploring how local homeless assistance coordinating agencies, or Continua of Care, were addressing the needs of persons experiencing homelessness during the beginning of the COVID-19 pandemic.

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Foundational	Scott, Hannah; Bryant, Toba; and Aquanno, Scott	“The Role of Transportation in Sustaining and Reintegrating Formerly Homeless Clients” ( <i>Journal of Poverty</i> , Vol. 24, Iss. 7)	<a href="https://doi.org/10.1080/1087580/10875549.2020.1740375">https://doi.org/10.1080/1087580/10875549.2020.1740375</a>	2020	Qualitative interview study with persons formerly experiencing homelessness on the importance of public transportation. Some participants reported social exclusion of transportation by identifying transportation subsidies as haphazard, requiring tremendous effort to obtain, and discouraging use. Those who had access to transportation noted the importance of that access to healthcare and well-being needs.	Study highlighting the importance of access to transportation to persons experiencing homelessness. The study shows access to transportation is key to access to health, social, and basic need services and increased quality of life among this vulnerable population.
Foundational	Pittman, Brian; Nelson-Dusek, Stephanie; Gerrard, Michelle; and Shelton, Ellen	<i>Homelessness in Minnesota: Detailed Findings from the 2018 Minnesota Homeless Study</i>	<a href="https://www.wilder.org/sites/default/files/imports/2018_HomelessnessInMinnesota_3-20.pdf">https://www.wilder.org/sites/default/files/imports/2018_HomelessnessInMinnesota_3-20.pdf</a>	2020	Analysis of a survey of 4,181 unsheltered people in Minnesota, their demographics and characteristics, their path into homelessness, and obstacles to getting out of it	Found that 33% of respondents had slept the night at a highway rest area, on a transit vehicle, or at transit stop or station
Strategies	Rosenberger, Robert	“On Hostile Design: Theoretical and Empirical Prospects” ( <i>Urban Studies</i> , Vol. 57, Iss. 4)	<a href="https://doi.org/10.1177/0042098019853778">https://doi.org/10.1177/0042098019853778</a>	2020	This article reviews the main examples of hostile design, considers what, at minimum, must be addressed by theoretical accounts of this phenomenon, and identifies empirical research projects that are just waiting to be performed. The author suggests that theories of hostile design must address 1) value judgment, 2) wider social and political contexts within which hostile design fits, 3) visibility of some and invisibility of other hostile designs to untargeted populations, 4) possibility of resistance, 5) variations within the class of hostile designs. He further proposes that empirical research is needed to address 1) the empirical reality of hostile design in cities, 2)	The study provides a framework for studying defensive design.

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Encampments	Cohen, Rebecca; Yetvin, Will; and Khadduri, Jill	<i>Understanding Encampments of People Experiencing Homelessness and Community Responses: Emerging Evidence as of Late 2018</i>	<a href="https://doi.org/10.2139/ssrn.3615828">https://doi.org/10.2139/ssrn.3615828</a>	2019	<p>people's awareness of and attitudes towards hostile design, 3) the public health impacts of hostile designs on particular sections of the population, which would include whether anti-homeless designs are harmful or helpful to homeless people overall.</p> <p>This paper documents what is known about homeless encampments as of late 2018, based on a review of the limited literature produced thus far by academic and research institutions and public agencies, supplemented by interviews with key informants. This paper is part of a larger research study sponsored by the U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation, and the U.S. Department of Housing and Urban Development, Office of Policy Development and Research. This study's goal is to contribute to understanding of homelessness, including the characteristics of homeless encampments and the people who stay in them, as well as local ideas about how to address encampments and their associated costs.</p>	<p>This study focuses on best practices related to encampments and how public agencies are addressing homelessness around the country. Many of these practices are applicable to how agencies can best support people experiencing homelessness while connecting them to support services.</p>



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Foundational	Murphy, Erin R.	"Transportation and Homelessness: a Systematic Review" ( <i>Journal of Social Distress and the Homeless</i> , Vol. 28, Iss. 2)	<a href="https://doi.org/10.1080/10530789.2019.1582202">https://doi.org/10.1080/10530789.2019.1582202</a>	2019	Literature review examining studies on transportation and its impact on adults experiencing homelessness. Review included studies published between 1997 and 2017 in which the primary variable of interest was transportation, in addition to other inclusion criteria. Findings of this research demonstrate that transportation is a critical although under-researched variable in the lives of individuals experiencing homelessness.	Literature review adds to the weight of evidence that transportation is critical to persons experiencing homelessness as it can impact access to employment, educational opportunities, and health and social services. Public transit and walking are the most common means of transportation among people experiencing homelessness. Medical services, social visits, food banks, churches, and job searches are the most common travel purposes for people experiencing homelessness.
Foundational	Rountree, Janey; Hess, Nathan; and Lyke, Austin	<i>Health Conditions among Unsheltered Adults in the U.S.</i>	<a href="https://www.capolicylab.org/wp-content/uploads/2023/02/Health-Conditions-Among-Unsheltered-Adults-in-the-U.S..pdf">https://www.capolicylab.org/wp-content/uploads/2023/02/Health-Conditions-Among-Unsheltered-Adults-in-the-U.S..pdf</a>	2019	Analysis of survey data on the health and behavioral health to provide a comprehensive national view of persons experiencing unsheltered homelessness and compares their experiences with unhoused individuals in shelters. The findings do reinforce the importance of stable housing as a social determinant of health and as essential for ending homelessness, for people in both groups.	Comprehensive survey analysis characterizing the health of persons experiencing unsheltered homelessness as compared to those experiencing sheltered homelessness. Results find that addressing the problem will require mobilization of efforts and multiple sectors and systems, not just programs dedicated to preventing and ending homelessness.



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Foundational	Wilder Research	<i>Metro Transit Riders: A Special Analysis of Data from the 2018 Minnesota Homeless Study</i>	<a href="https://drive.google.com/file/d/13hquNbu1D_MRRpZcDnTBX0XkZE9VDcj/view?usp=drive_link">https://drive.google.com/file/d/13hquNbu1D_MRRpZcDnTBX0XkZE9VDcj/view?usp=drive_link</a>	2019	Analysis of a survey of 135 people taking shelter on transit in the Twin Cities, Minnesota, 686 who did so recently, and 3,508 other unhoused people in the metropolitan area. The study found that those sheltering on transit were more likely to be chronically unhoused, single, men, lower-income, and unemployed; to have mental illnesses and substance abuse problems; and to have been incarcerated.	A unique comparison of the different characteristics of unhoused people taking shelter in transportation environments versus elsewhere.
Enforcement	Goldfischer, Eric	"From Encampments to Hotspots: The Changing Policing of Homelessness in New York City" ( <i>Housing Studies</i> , Vol. 35, Iss. 9)	<a href="https://doi.org/10.1080/02673037.2019.1655532">https://doi.org/10.1080/02673037.2019.1655532</a>	2019	The paper reviews the shift in enforcement around homelessness in New York City in 2015 from "encampments" to "homeless hotspots," using data from city policy memos, interviews, ethnographic field work, and data from the complaint system. The author argues that this led to the shift in policing from targeting structures to bodies of unhoused people, the former creating a "visual need for housing" while the latter for services. Thus, policing of homelessness often relied on the premise of "looking homeless," rather than violations of law, and used practices such as "move-on orders", involuntary psychiatric commitment, "being brought in but the release with no charges or proof of any kind of encounter with law enforcement." The author also found higher levels of enforcement in recently-gentrified neighborhoods.	The study reflects on recent changes in popular enforcement practices regarding homelessness and their relation to gentrification and the (in)visibility of homelessness.

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Enforcement	Herring, Chris	"Complaint-oriented Policing: Regulating Homelessness in Public Space" ( <i>American Sociological Review</i> , Vol. 84, Iss. 5)	<a href="https://doi.org/10.1177/0003122419872671">https://doi.org/10.1177/0003122419872671</a>	2019	The author outlines a model of "complaint-oriented policing" to describe a form of policing poverty that is different from previously theorized models of "aggressive patrol" and "therapeutic policing." Complaint-oriented policing differs from the other two models as 1) police interactions are initiated by third parties, 2) enforcement often aims to "shuffle burden" between space-time and different bureaucracies, 3) enforcement often avoids arrests or forcing unhoused individuals into social services, but, through move-along orders, citations, confiscation of properties, and threats of arrests, results in a process of "pervasive penalty" that entails frequent and lingering interactions with unhoused individuals. Complaint-oriented policing thus tends to neutralize homelessness and poverty but nonetheless "exact material, psychological and social suffering" of unhoused individuals.	The paper describes how complaints, more than or in addition to policies, drive police interactions and deployments regarding homelessness and how police and other public agencies "shuffle burdens" between them.

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Strategies	Bell, Lacy; Beltran, Gabriel; Berry, Elayne; Calhoun, Derik; Hankins, Tera; and Hester, Laura	<i>Public Transportation and Social Responsibility</i>	<a href="https://www.wapta.com/wp-content/uploads/Transit_Responses_Homeless/REPORT-2018-Leadership-APTA-Team-4-Public-Transit-and-Social-Responsibility.pdf">https://www.wapta.com/wp-content/uploads/Transit_Responses_Homeless/REPORT-2018-Leadership-APTA-Team-4-Public-Transit-and-Social-Responsibility.pdf</a>	2018	Report reviewing case studies, interviewing executive level transportation and community leaders, and conducting open discussions with public and private community partners about the role of public transportation and the social responsibility of systems related to homelessness. The research focuses on describing what attracts persons experiencing homelessness to transit systems, how agencies are responding, and challenges faced by transit providers. Key findings from the survey of 49 transit agencies are that the majority of agencies (73%) believe homelessness impacts their ridership in one form or another and most (68%) believe that transit agencies should play a role in addressing homelessness. However, very few agencies (5%) have resources allocated for this issue.	Report detailing survey on the social responsibility of transit agencies to address homelessness. Report includes several case studies of transit agencies and how they are responding to homelessness, in many cases without dedicated funding sources.
Foundational	Munthe-Kaas, Heather M.; Berg, Rigmor C.; and Blaasv�er, Nora	"Effectiveness of Interventions to Reduce Homelessness: A Systematic Review and Meta-analysis" ( <i>Campbell Systematic Reviews</i> , Vol. 14, Iss. 1)	<a href="https://doi.org/10.4073/csr.2018.3">https://doi.org/10.4073/csr.2018.3</a>	2018	Literature review to assess the effectiveness of various interventions to reduce homelessness. The authors find that various interventions including case management, high-intensity case management, and critical time intervention in particular, as well as housing assistance including abstinence-contingent housing programs, non-abstinence-contingent housing programs, housing vouchers with case management, and residential treatment with case management all appear to reduce homelessness and improve housing stability.	A comprehensive review of different types of homeless outreach strategies and their effectiveness

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Strategies	Johnsen, Sarah; Fitzpatrick, Suzanne; and Watts, Beth	"Homelessness and Social Control: A Typology" ( <i>Housing Studies</i> , Vol. 33, Iss. 7)	<a href="https://doi.org/10.1080/02673037.2017.1421912">https://doi.org/10.1080/02673037.2017.1421912</a>	2018	Defensive architecture may be characterized as a form of social control using force by removing unhoused individuals away from particular sites, or it may sometimes be characterized as social control by influencing targeted groups through nudge mechanisms, as such design makes certain spaces less attractive for certain people and activities. But such designs mostly result in displacement rather than solving the social problem.	The study places defensive design in the context of broader social forces around homelessness.
Foundational	Hui, Vivian and Habib, Khandker	"Homelessness vis-à-vis Transportation-induced Social Exclusion: An Econometric Investigation of Travel Behavior of Homeless Individuals in Toronto, Canada" ( <i>Transportation Research Record: Journal of the Transportation Research Board</i> , Vol. 2665, Iss. 1)	<a href="https://doi.org/10.3141/2665-07">https://doi.org/10.3141/2665-07</a>	2017	The researchers conducted 159 interviews with unhoused individuals across eight shelters and drop-in agencies in Toronto, Canada. The interview included stated adaptation experiments to reveal how transportation affected or hindered unhoused individuals' activity participation processes. Decision choice models were estimated with econometric modeling methods, which indicated the influence of variables such as age, income, and duration of homelessness on the decision to reject or accept employment opportunities. The results also showed that a person's accustomed mode choice and daily number of trips had an effect on the decision to travel for social activity purposes.	This study used decision choice models to predict decisions to travel for various purposes. Key findings include 1) younger individuals are more likely to travel for work-related purposes; 2) old adults are more likely to pay for time savings; 3) newly or chronically homeless individuals are less willing to pay for time savings; 4) given additional budget, respondents tend to make both more and longer trips (42% and 64%) and also tend to travel less by walking (-37%) and more by transit (+62%).

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Encampments	Junejo, Samir	<i>No Rest for the Weary: Why Cities Should Embrace Homeless Encampments</i>	<a href="https://doi.org/10.2139/ssrn.2776425">https://doi.org/10.2139/ssrn.2776425</a>	2016	Partly due to their visible nature, homeless encampments are often at the core of the debate about how local governments should deal with homelessness. This report describes why encampments exist and the many benefits that encampments can provide to their residents. In addition, the report examines the disruptions of encampments by local governments, most commonly known as “sweeps.” The findings indicate that disruptions of encampments are ineffective, traumatizing to residents, and potentially unconstitutional. The report concludes with recommendations to policymakers on how they can embrace encampments without failing to pursue more permanent solutions to homelessness.	A report on the impact of encampments on public lands, a case for accommodating them in the short-term, and a description of how some approaches are not effective in minimizing homelessness

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Foundational	Hui, Vivian and Habib, Khandker	"Transportation-related Social Exclusions and Homelessness: What Does the Role of Transportation Play in Improving the Circumstances of Homeless Individuals?"	<a href="https://www.researchgate.net/publication/284452343_Transportation_Related_Social_Exclusions_and_Homelessness_What_Does_the_Role_of_Transportation_Play_in_Improving_the_Circumstances_of_Homeless_Individuals">https://www.researchgate.net/publication/284452343_Transportation_Related_Social_Exclusions_and_Homelessness_What_Does_the_Role_of_Transportation_Play_in_Improving_the_Circumstances_of_Homeless_Individuals</a>	2016	Qualitative and preliminary quantitative analysis of interviews with persons experiencing homelessness in the City of Toronto to examine the intricacies of transportation-related social exclusions and homelessness. The results from this study add to the growing body of literature that suggest more attention should be given to the transport needs of persons experiencing homelessness, as many rely on transportation to find appropriate jobs and housing.	Research describing the complexities of transportation-related exclusions as it relates to persons experiencing homelessness
Strategies	National Academies of Sciences, Engineering, and Medicine	<i>Transit Agency Practices in Interacting with People Who Are Homeless</i>	<a href="https://www.nap.edu/catalog/23450">https://www.nap.edu/catalog/23450</a>	2016	Transit Cooperative Research Program synthesis on effective practices, approaches, and outcomes regarding interactions within the transit industry with persons experiencing homelessness. The synthesis includes a literature review and a survey of 65 transit agencies. Additionally, six detailed case studies profiling innovative and successful practices are described in the report.	Synthesis describing issues, practices and various strategies to address homelessness by transit agencies in the U.S. The synthesis includes comprehensive guidance from the perspective of different professions and includes case study examples on challenges, solutions, partnerships, and lessons learned at six agencies.

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Foundational	Bauman, Tristia; Rosen, Jeremy; Tars, Eric; Foscarinis, Maria; Fernandez, Janelle; Robin, Christian; Sowa, Eugene; Maskin, Michael; Cortemeglia, Cheryl; and Nicholes, Hannah	<i>No Safe Place: The Criminalization of Homelessness</i>	<a href="https://homelesslaw.org/wp-content/uploads/2019/02/No-Safe-Place.pdf">https://homelesslaw.org/wp-content/uploads/2019/02/No-Safe-Place.pdf</a>	2014	This report provides an overview of criminalization measures in effect across the nation and looks at trends in the criminalization of homelessness, based on an analysis of the laws in 187 cities that the Law Center has tracked since 2009. The report further describes why these laws are ineffective in addressing the underlying causes of homelessness, how they are expensive to taxpayers, and how they often violate homeless persons' constitutional and human rights. Finally, we offer constructive alternatives to criminalization, making recommendations to federal, state, and local governments on how to best address the problem of visible homelessness in a sensible, humane, and legal way.	The study provides an overview of the legal issues surrounding homelessness and how it has been criminalized, with suggestions of alternative ways to address homelessness on public lands.
Encampments	Bassett, Ellen; Tremoulet, Andr��e; and Moe, Allison	<i>Relocation of Homeless People from ODOT Rights-of-way</i>	<a href="https://doi.org/10.15760/trec.67">https://doi.org/10.15760/trec.67</a>	2013	Research project consisting of an investigation of responses to homeless encampments on rights-of-way owned by state departments of transportation. The research aimed to analyze the prevalence of homelessness on rights-of-way, document DOTs' responses, and create a best practices guide related to the removal of homeless encampments by DOT staff through a review of literature and follow-up interviews with key survey respondents. The research found that the majority of DOTs nationally are dealing with challenges related to homeless encampments on rights-of-way, with agencies noting that homelessness presents an operational challenge.	Survey that aimed to determine the extent to which homeless encampments across the country pose an operational and/or safety concern for DOTs. Additionally, the project researched best practices related to the removal of homeless encampments through a literature review and follow-up interviews with key survey respondents.



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Foundational	Parker, R. David and Dykema, Shana	"The Reality of Homeless Mobility and Implications for Improving Care" ( <i>Journal of Community Health</i> , Vol. 38, Iss. 4)	<a href="https://doi.org/10.1007/s10900-013-9664-2">https://doi.org/10.1007/s10900-013-9664-2</a>	2013	Cross-sectional study seeking to determine characteristics of the mobility and reported health conditions of persons experiencing homelessness in a medium-sized southern city in the U.S. Results include: persons experiencing homelessness were less mobile and less transient than the general population. The findings challenge notions that persons experiencing homelessness are mobile. Consequently, persons experiencing homelessness may benefit from referral to regular outpatient care.	Study which found that, of a cross-sectional sample of persons experiencing homelessness in a southern U.S. city, persons experiencing homelessness are less mobile and less transient when compared to the general state population. These findings add evidence that medical care systems should implement standard practices to reduce cost, conserve resources, and better respond to the needs of homelessness.
Enforcement	Hartmann McNamara, Robert; Crawford, Charles; and Burns, Ronald	"Policing the Homeless: Policy, Practice, and Perceptions" ( <i>Policing: An International Journal of Police Strategies and Management</i> , Vol. 36, Iss. 2)	<a href="https://doi.org/10.1108/13639511311329741">https://doi.org/10.1108/13639511311329741</a>	2013	The authors surveyed 100 police departments and interviewed police officers and unhoused people in one city. They found that while police departments of all sizes encounter unhoused individuals, larger ones had more contact and offered more services. But training and information provided for officers did not vary. Interviews show that many police officers did not think addressing homelessness was their responsibility; some felt too much burden and often resorted to making arrests. Unhoused people felt that police officers were harassing them and constraining their movement and activities.	The research explores the burden of homelessness-related services and interactions with the unhoused on police officers and the complexities of the relationship between officers and unhoused residents.

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Strategies	Tremoulet, Andr�e and Bassett, Ellen	<i>A Case Study of the Baldock Restoration Project</i>	<a href="https://www.oregon.gov/ODO/T/Programs/Research/Documents/baldockrestoration.pdf">https://www.oregon.gov/ODO/T/Programs/Research/Documents/baldockrestoration.pdf</a>	2012	Case study of the Baldock Restoration Project, in which a team from the travel, transportation, law enforcement, and social services professions came together to help persons experiencing homelessness leave their long-standing community located at an Oregon highway rest area. Key findings from the case study included the importance of a collaborative, multi-agency approach to problem-solving that involved a "push/pull" strategy. The "pull" was provided by social service agencies to incentivize individuals into obtaining housing and taking steps toward rejoining traditional society. The "push" was provided by law enforcement agencies, which established and maintained a disbanding deadline while supporting social service agencies. The case study is part of a larger project that seeks to analyze ways in which transportation agencies address the challenge of homeless encampments on public rights-of-way.	Case study of a collaborative, multi-agency approach to assist persons experiencing homelessness in leaving a long-standing community in an Oregon highway rest area. The findings highlight the importance of the multi-agency approach to the successful outcome of the project.
Encampments	Tremoulet, Andr�e; Bassett, Ellen; Moe, Allison	<i>Homeless Encampments on Public Right-of-way: A Planning and Best Practices Guide</i>	<a href="http://archives.pdx.edu/ds/psu/9231">http://archives.pdx.edu/ds/psu/9231</a>	2012	A guide presenting a problem-solving approach to addressing the impacts of unhoused populations on public right-of-ways, enlisting the support and help of partners, each with different areas of expertise. The approach discussed in the guide is based on the premise that the most effective way to deal with the impacts of homelessness on right-of-way in the long term is by combining the "push" provided by law enforcement agencies and the criminal justice system with the "pull" provided by social service and housing providers who can help homeless individuals	Guide written for state transportation agencies that want to address homeless populations on public right-of-ways, with an approach distilled from lessons learned from state and other public agencies that have responded effectively to situations in their own communities.

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					reassess their options and move on with their lives.	
Foundational	Nichols, Laura and Cázares, Fernando	“Homelessness and the Mobile Shelter System: Public Transportation as Shelter” ( <i>Journal of Social Policy</i> , Vol. 40, Iss. 2)	<a href="https://doi.org/10.1017/S0047279410000644">https://doi.org/10.1017/S0047279410000644</a>	2011	Research paper describing survey results of unhoused transit riders on a bus over three nights in one United States county. The authors found that a substantial number of unhoused riders used the bus as their main form of night-time shelter throughout the year and that some have ridden the bus for shelter for many years. Moreover, many unhoused riders actively chose the bus over emergency shelters.	Research documenting persons experiencing homelessness that seek overnight shelter on public transportation systems. Research provides key characteristics and descriptions of persons that chose overnight shelter on buses. Researchers found that those sheltering on buses were more likely men, veterans, and Black than those sheltering elsewhere.
Encampments	Chamard, Sharon	<i>Homeless Encampments</i>	<a href="https://policenter.asu.edu/content/homeless-encampments-0">https://policenter.asu.edu/content/homeless-encampments-0</a>	2010	Homeless encampments are only one aspect of the larger set of problems related to homelessness, street life, and public disorder. This guide, part of the Problem-oriented Guides for Police series for the U.S. Department of Justice's Office of Community-oriented Policing Services, summarizes knowledge about how police can reduce the harm caused by specific crime and disorder problems and is written specifically for police. This guide does not cover all aspects of homelessness, only those that pertain to the small proportion of unhoused people who live in encampments. The guide begins by describing the problem and reviewing factors	Overview of different approaches to managing the law enforcement of encampments

Keyword	Author	Title	URL	Publication Year	Description / Abstract	Applicability to NCHRP 20-129
Enforcement	Berk, Richard and MacDonald, John	"Policing the Homeless: An Evaluation of Efforts to Reduce Homeless-related Crime" ( <i>Criminology and Public Policy</i> , Vol. 9, Iss. 4)	<a href="https://doi.org/10.1111/j.1745-9133.2010.00673.x">https://doi.org/10.1111/j.1745-9133.2010.00673.x</a>	2010	that contribute to the overall situation. It then identifies a series of questions to help law enforcement analyze their local problem. Finally, it reviews responses to the problem and what is known about them from evaluative research and police practice.	
					In 2006, the Los Angeles Police Department officers dispersed homeless encampments, issued citations, and made arrests for law violations in order to reduce nuisance, property, and violent crimes in downtown Los Angeles. This so-called Safer Cities Initiative targeting crimes and homelessness in Skid Row had a significant but modest effect on crime reduction, with possible beneficial spillover effect to neighboring districts. The authors argue that SCI can be viewed as an effort to reduce the spatial density of homelessness rather than the problem of homelessness itself, and the merit of such an initiative cannot be fully considered without accounting for social services provided for unhoused people at the same time.	The authors note that "law enforcement actions do not address the roots of homelessness nor most of its consequences. Getting tough on the homeless should not be confused with policies or programs that respond fundamentally to the social and personal problems that homelessness presents."

Keyword	Author	Title	URL	Publication Year	Description / Abstract	Applicability to NCHRP 20-129
Foundational	Olivet, Jeffrey; Bassuk, Ellen; Elstad, Emily; Kenney, Rachael; and Jassil, Lauren	"Outreach and Engagement in Homeless Services: A Review of the Literature" ( <i>Open Health Services and Policy Journal</i> , Vol. 3, Iss. 1)	<a href="https://benhamopen.com/ABSTRACT/TOHSPJ-3-53">https://benhamopen.com/ABSTRACT/TOHSPJ-3-53</a>	2010	Review of quantitative and qualitative research as well as colloquial literature on outreach and engagement targeted at unhoused individuals. Finding from the review include 1) while outreach is variably defined, there is agreement that "outreach is a process designed to contact individuals in non-traditional settings who might otherwise be ignored or underserved" in order to "improve physical and mental health and social functioning, increase use of human services, and re-integrate people into the community"; 2) quantitative research suggests that outreach has positive effects on health and housing outcomes, but most were on single unhoused individuals with mental health and substance use issues; 3) emotional connection and trusting relationship are critical to the outreach and engagement process; 4) competent outreach workers need specialized knowledge of the needs of unhoused individuals and resources available to help them, as well as specific skills in building relationships and protecting themselves during encounters.	Study reviews homeless outreach approaches and case studies.
Foundational	Jocoy, Christine L. and Del Casino, Vincent J.	"Homelessness, Travel Behavior, and the Politics of Transportation Modalities in Long Beach, California" ( <i>Environment and Planning A: Economy and</i>	<a href="https://doi.org/10.1068/a42341">https://doi.org/10.1068/a42341</a>	2010	Through focus groups and structured interviews, this paper examines the daily mobility of unhoused adults in Long Beach, California to identify the ways in which the everyday travel of unhoused individuals compares with national U.S. household travel patterns. Results show that their mobility is highly spatially constrained and structured by sociocultural relations of stigmatization, economic productivity, and personal	The study includes key findings on the mobility of unhoused individuals and barriers they face.

Keyword	Author	Title	URL	Public ation Year	Description / Abstract	Applicability to NCHRP 20-129
		Space, Vol. 42, Iss. 8)			responsibility that are reflected in the operational conventions and institutional practices of transportation and social welfare systems. Nonetheless, during the course of a day, unhoused individuals move among spaces where they experience varying levels of inclusion and exclusion.	



Keyword	Author	Title	URL	Publication Year	Description / Abstract	Applicability to NCHRP 20-129
Foundational	Jocoy, Christine L. and Del Casino, Vincent J.	<i>The Mobility of Homeless People and Their Use of Public Transit in Long Beach, California</i>	<a href="https://www.researchgate.net/profile/Vincent_Del_Casino/publication/266864914_The_Mobility_of_Homeless_People_and_Their_Use_of_Public_Transit_in_Long_Beach_California/links/55dcefcc08ae591b309abcc2/The-Mobility-of-Homeless-People-and-Their-Use-of-Public-Transit-in-Long-Beach-California.pdf">https://www.researchgate.net/profile/Vincent_Del_Casino/publication/266864914_The_Mobility_of_Homeless_People_and_Their_Use_of_Public_Transit_in_Long_Beach_California/links/55dcefcc08ae591b309abcc2/The-Mobility-of-Homeless-People-and-Their-Use-of-Public-Transit-in-Long-Beach-California.pdf</a>	2008	This study used focus group interviews and structured surveys in Long Beach, California to understand the mobility patterns of unhoused individuals and particularly their use of transit. Key interview findings include 1) costs limit unhoused people's access to transit and other opportunities through transit; 2) lack of regional connectivity in transit system and integrated fare structure limit unhoused people's access to the regional labor market and social service system; 3) mobility of unhoused people may also be limited by planning regulations that restrict the movement of unhoused individuals in the neighborhoods where shelters are located; 4) unhoused individuals using transit system as shelter can be denied access to it even though they pay for the fare. Over half of respondents used transit daily. Transit and shuttle services provided by social service agencies were the primary modes of travel for unhoused people. Most respondents used transit for trips to healthcare, jobs or job searches, and social services.	The study reviews the travel patterns of unhoused individuals, their modes and trip purposes, and barriers to travel.

Keyword	Author	Title	URL	Publication Year	Description / Abstract	Applicability to NCHRP 20-129
Foundational	Homeless Alliance of Western New York	<i>Left Behind: How Difficulties with Transportation Are a Roadblock to Self-sufficiency</i>	<a href="https://ppgbuffalo.org/files/documents/environment/transit/environment-left-behind.pdf">https://ppgbuffalo.org/files/documents/environment/transit/environment-left-behind.pdf</a>	2006	This study conducted a transportation needs assessment among homeless and very low-income persons at sites around Erie County, New York, through a survey of about 800. The survey finds that 1) 53 percent respondents had difficulty paying for transportation; 2) 42 percent reported having to reject a job opportunity due to lack of transportation access to the job location; 3) 21 percent reported having missed a job interview due to difficulties with public transit. The study recommends making public transportation more affordable through measures including subsidized bus passes, as well as providing better access to suburban job locations through better transportation and land use planning.	Report demonstrates the barriers to transportation for unhoused individuals and the relationships of transportation to employment for unhoused people.

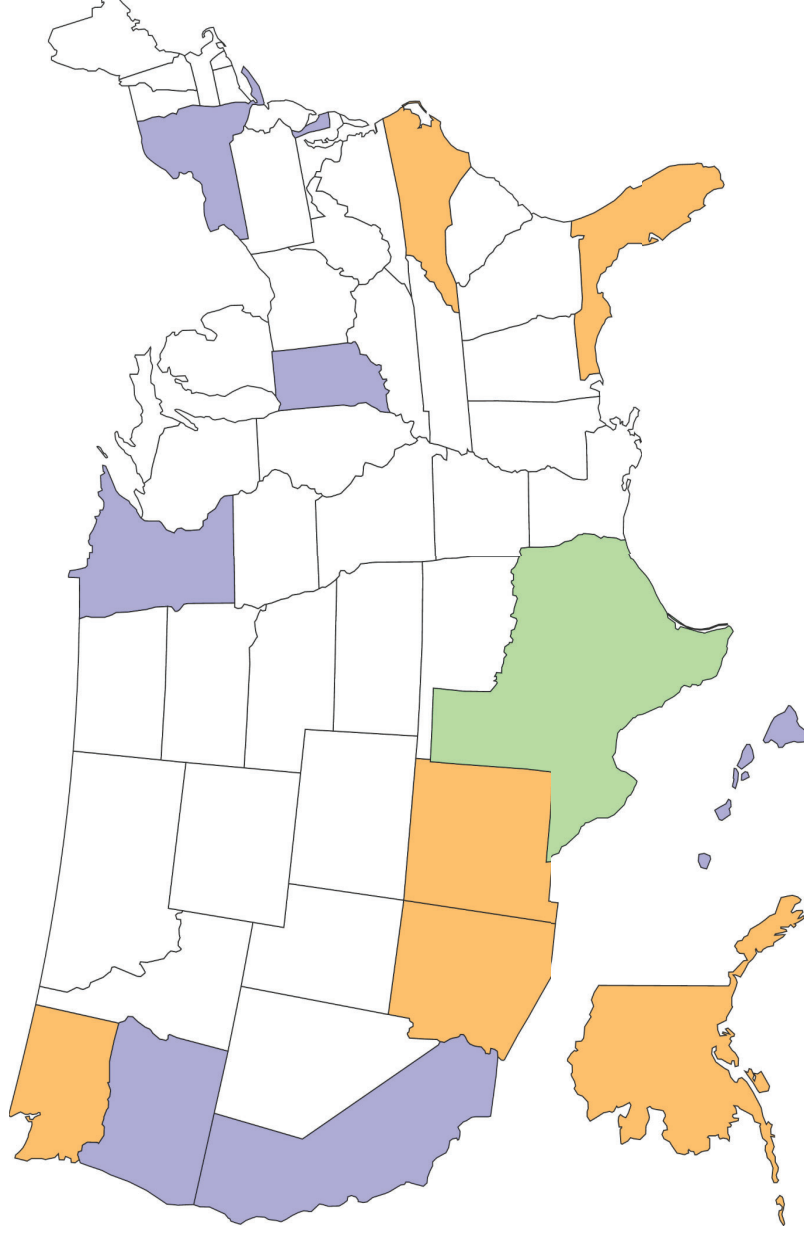
Keyword	Author	Title	URL	Publication Year	Description / Abstract	Applicability to NCHRP 20-129
Encampments	Potier-Brown, Laurie and Pipkin, Gwen	"Urban Campers as a New Population for Community Impact Assessment: Case Study of US-301 in Sarasota, Florida" ( <i>Transportation Research Record: Journal of the Transportation Research Board</i> , Vol. 1924, Iss. 1)	<a href="https://doi.org/10.1177/0361198105192400115">https://doi.org/10.1177/0361198105192400115</a>	2005	<p>All states and cities and most towns have urban camper communities. "Urban camper" is a working term for unhoused people who live in urban or suburban areas. The term helps differentiate campers with stable, minimally developed night locations from those unhoused people who have nowhere consistent to go. Camper populations vary from one to several hundred. They live in tents or shanties without services or utilities. Many residents work, access shopping and services, and send their children to school. Their camp communities are their homes. Public safety and social service agencies know these people, but they are invisible to the average citizen. Many urban campers are U.S. citizens, but the mainstream community has traditionally overlooked their legal and personal rights. Acknowledging their rights may cause legal problems for local governments. Land development and land use changes can force campers out of campsite locations. Sometimes they find out about changes the morning bulldozers arrive. A widening of U.S. Highway 301 in Sarasota, Florida, would have displaced hundreds of urban campers who lived in wooded patches along the roadway. The Florida Department of Transportation asked a community impact assessment (CIA) team to identify the problem's scope and to ensure that this displacement would proceed better than past displacements. The CIA team surveyed area social service agencies (SSAs) that are used regularly by many urban campers. Because traditional CIA meetings were not feasible or</p>	Detailed case study of camping on US-301 in Sarasota, Florida

Keyword	Author	Title	URL	Publication Year	Description / Abstract	Applicability to NCHRP 20-129
					<p>welcome, SSA staff became the conduit for communication with informal camp leadership. The CIA team kept SSAs updated. Before construction started the majority of urban campers had melted away.</p>	
Foundational	Kuhn, Randall and Culhane, Dennis P.	<p>“Applying Cluster Analysis to Test a Typology of Homelessness by Pattern of Shelter Utilization: Results from the Analysis of Administrative Data” (<i>American Journal of Community Psychology</i>, Vol. 26, Iss. 2)</p>	<p><a href="https://doi.org/10.1023/A:1022176402357">https://doi.org/10.1023/A:1022176402357</a></p>	1998	<p>Cluster analysis of administrative data on public shelter for persons experiencing homelessness in New York City and Philadelphia in the late 1980s through mid-1990s. Analysis categorized persons experiencing homelessness into three groups (transitionally, episodically, and chronically) by number of shelter days and number of shelter episodes. The analysis provided demographic, behavioral, and health comparisons across the three groups. The authors concluded that the analysis results suggest that program/outreach planning would benefit from applying the typology described in the analysis.</p>	<p>Cluster analysis categorizing persons experiencing homelessness in two major United States cities to provide demographic, behavioral, and health comparisons across groups. Categories/typology of the analysis could be applied to outreach planning to better address or provide support to individual needs.</p>

Keyword	Author	Title	URL	Publication Year	Description / Abstract	Applicability to NCHRP 20-129
Foundational	Hopper, Kim	"Symptoms, Survival, and the Redefinition of Public Space: A Feasibility Study of Homeless People at a Metropolitan Airport" ( <i>Urban Anthropology and Studies of Cultural Systems and World Economic Development</i> , Vol. 20, Iss. 2)	<a href="https://www.jstor.org/stable/40553209">https://www.jstor.org/stable/40553209</a>	1991	Ethnographic study of persons experiencing homelessness in the late 1980s in an unnamed metropolitan airport in the New York area. Study found that persons seek shelter in the airport.	Early study examining the reasons why persons experiencing homelessness seek shelter in airports. Study was conducted doing field interviews in a major New York area airport.

## Appendix B: Maps of States with Interviews or Contacts for Industry Scan

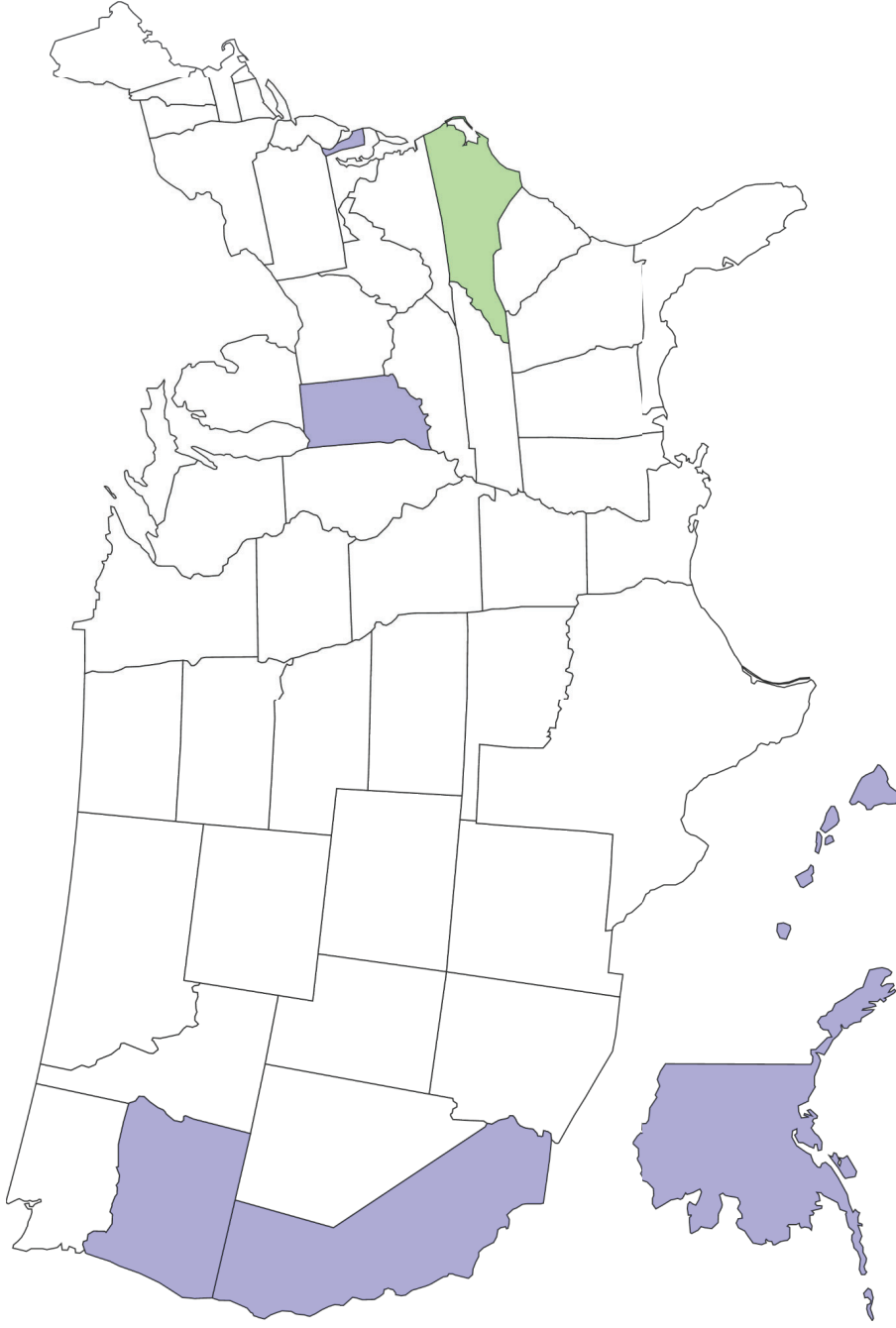
Figure 11. State DOTs Interviewed or Communicated with for Industry Scan



Notes on Figure 11: Blue = interviewed as part of the research for Loukaitou-Sideris et al. (2023) and Wasserman et al. (2023); orange = received a written response as part of the research for Loukaitou-Sideris et al. (2023) and Wasserman et al. (2023); green = delivered a presentation at the 2024 TRB Annual Meeting (Arellano and Wagner, 2024)



Figure 12. External DOTs Partners or Involved Organizations Interviewed for Industry Scan



Notes on Figure 12: Blue = one external entity interviewed as part of the research for Loukaitou-Sideris et al. (2023) and Wasserman et al. (2023); green = two external entities interviewed as part of the research for Loukaitou-Sideris et al. (2023) and Wasserman et al. (2023).

Appendix C: NCHRP 20-129 Survey State DOTs

Appendix D: NCHRP 20-129 Survey State CoCs

Appendix F: Criteria and Determinations

# Appendix C: DOT Survey Instrument

## NCHRP 20-129 Survey State DOTs (Version 3)

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Start of Block: For information purposes only, please provide the following:

### Q31 Guide for Addressing Encampments on State Transportation Rights-of-Way

Information collected from you for this research will be used to develop a guide of suggested practices for responding to, managing, and deterring encampments on the rights-of-way. The results of the survey will be published by the National Academies of Sciences, Engineering, and Medicine Transportation Research Board and will be used to shape and inform future policy with regard to this issue nationwide. No personally identifiable information will be included.

The survey should take around 15 minutes. Thank you for taking the time to participate. Your responses are valuable and will help us develop guidance for addressing encampments on state transportation rights-of-way.

#### **Statement of Informed Consent**

Your participation is voluntary. You may opt out of the survey at any time. There are no expected physical or psychological impacts from taking part in the study. Your individual survey responses will be confidential. We will store the survey data on secured servers at Portland State University. It will not be possible to tell who said what in any reports. We do not anticipate any risk to you in answering the survey. No one will be able to identify you or your answers, and no one will know whether or not you participated in the study. Individuals from the Institutional Review Board may inspect these records. If the data is published, no individual information will be disclosed. Portland State University does not release information about how any individual answers the survey and will not sell or give away the lists of respondents who participate in our research.

#### **Any questions?**

The Portland State University Institutional Review Board has reviewed this project. If you have any concerns about your rights in this study, please contact the PSU Office of Research Integrity at (503) 725-2227 or email [hsrrc@pdx.edu](mailto:hsrrc@pdx.edu). If you have questions about the study itself, please contact John MacArthur by telephone at (503) 725-2866, by e-mail at [macarthur@pdx.edu](mailto:macarthur@pdx.edu), or by mail at Transportation Research and Education Center (TREC), P.O. Box 751, Portland State University, Portland, OR 97207-0751.

This research can only be successful with the generous help of people like you. Thank you for taking part in our survey!

**Do you agree to participate in this survey?**

By clicking “Accept”, you are consenting to participate in this survey. If you do not consent, please click “Decline” to navigate away from the survey.

Accept (1)

Decline (2)

*Skip To: End of Survey If Guide for Addressing Encampments on State Transportation Rights-of-Way Information collected from... = Decline*

---

1.1 For information purposes only, please provide the following

Name: (1) \_\_\_\_\_

Title: (2) \_\_\_\_\_

Agency: (3) \_\_\_\_\_

Division, office, or department: (4)  
\_\_\_\_\_

Email: (5) \_\_\_\_\_

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1.2 Which functional area(s) best describe your work? Please pick all those that are most relevant:

- Bridges and Structures (1)
- Community Partnerships (2)
- Construction (3)
- Design/Engineering (4)
- Emergency Management (5)
- Environmental Services (6)
- Facilities (7)
- Government Affairs (8)
- Highway Operations (9)
- Homelessness (10)
- Maintenance (11)
- Pavements (12)
- Planning and Programming (13)
- Right-of-Way (14)
- Safety (15)
- Security (16)
- Traffic Management (17)

Other (18) \_\_\_\_\_

End of Block: For information purposes only, please provide the following:

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Start of Block: Block 1

2 How would you rate the extent of encampments on and unauthorized access to the DOT rights-of-way in your state by people believed to be experiencing homelessness?

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	
Not an issue	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Major issue

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3 On which of these state DOT rights-of-way has the agency experienced challenges with people experiencing homelessness? A major challenge would be a consistent issue that expends time, resources, funds and/or that impacts operations. A minor challenge would be occasional issues at a location that impact operations or require resources.

	Not a challenge (1)	Minor challenge (2)	Major challenge (3)
Adjacent property, such as wooded areas (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bridges, tunnels, overpasses, and underpasses (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
DOT facilities, storage areas, and buildings (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
DOT-managed rural roads (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
DOT-managed urban/suburban roads (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Highway/freeway interchanges (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Parking lots near roadways (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Paths and sidewalks (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ramps and medians (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rest stops (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Shoulders or adjacent road rights-of-way (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Streams, culverts, or drainage areas (12)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please specify) (13)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4 Please characterize the degree to which each of the following may be challenges in the context of DOT interactions with people believed to be experiencing homelessness. A major challenge would be a consistent issue that expends time, resources, funds and/or that impacts operations. A minor challenge would be occasional issues at a location that impact operations or require resources.

	Not a challenge (1)	Minor challenge (2)	Major challenge (3)
Ability to develop effective partnerships with homeless or community advocates (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ability to develop effective partnerships with social service agencies (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Barriers created by legal or regulatory issues (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Camping on DOT rights-of-way and facilities (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Damage to DOT infrastructure (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Environmental impacts that may interfere with environmental regulations (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Illegal activity on DOT rights-of-way and facilities (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of emphasis within DOT (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of funding resources able to be used in homelessness response (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of partnerships with social service agencies or non-profits (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of support from cities/counties (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of training of DOT personnel to respond to people experiencing homelessness (12)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Liability concerns about activities by or for people experiencing homelessness (13)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Parked or abandoned vehicles including recreational vehicles (14)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Safety concerns of DOT staff (15)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Safety issues and complaints from neighbors (16)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Safety issues on the roadway system (17)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Unclear policies and procedures (18)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please specify) (19)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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5 Has your DOT taken (or worked with partners to take) any of the following actions regarding homelessness on its rights-of-way?

	Current practice (1)	Considering or planning action (2)	Past practice (3)	Not considering (4)	Unsure (6)
Allowing people experiencing homelessness to use DOT facilities to spend the night (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Clearance or sweeps of homeless encampments from right-of-way settings or property (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Construction practices to discourage camping, sleeping or access (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Design or modify physical structures, such as bridges or interchanges, to discourage camping, sleeping or access (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Installation of structural elements or landscaping to discourage camping, sleeping or access (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Maintenance practices to discourage camping, sleeping or access (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Outreach efforts to connect people experiencing homelessness to housing, shelter, and/or services (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Partnerships with local law enforcement agencies related to homelessness (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Partnerships with social service or non-profit organizations (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Partnerships with state law enforcement agencies related to homelessness (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Partnerships with state, regional, or local government social service or housing agencies (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sanitation services (trash collection, portable restrooms, etc.) at encampments on DOT rights-of-way (12)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Repair of DOT infrastructure (13)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Temporary storage of belongings collected during clean-ups or sweeps (14)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Training of DOT staff on engaging with people experiencing homelessness (15)

Use of DOT land for temporary housing (such as “tiny homes,” serviced camping sites, etc.) (16)

Use, leasing, or sale of DOT land for longer-term housing (17)

Other policies/practices specific to homelessness (please specify): (18)

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*Display This Question:*

*If Has your DOT taken (or worked with partners to take) any of the following actions regarding homel... = Clearance or sweeps of homeless encampments from right-of-way settings or property [ Current practice ]*

5.1.1 How does your agency or your partners decide sites for clearance/sweeps?

*Select all that apply:*

- Based on reports and complaints from roadway users and neighbors (1)
- Based on reports and complaints from DOT staff or contractors (2)
- Based on reports and complaints from staff at other agencies and partner organizations (3)
- Based on formal prioritization criteria (4)
- Based on informal prioritization criteria (5)
- Our agency attempts to remove all encampments and individuals trespassing on DOT facilities (6)

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*Display This Question:*

*If How does your agency or your partners decide sites for clearance/sweeps? Select all that apply: = Based on formal prioritization criteria*

5.1.2.1 Please describe these criteria or upload or include a link to a document with these criteria, if available (text box option).

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*Display This Question:*

*If How does your agency or your partners decide sites for clearance/sweeps? Select all that apply: = Based on formal prioritization criteria*

5.1.2.2 Please describe these criteria or upload or include a link to a document with these criteria, if available (upload option).

Page Break

*Display This Question:*

*If Has your DOT taken (or worked with partners to take) any of the following actions regarding homel... = Clearance or sweeps of homeless encampments from right-of-way settings or property [ Current practice ]*

5.1.3 Please describe the procedure for conducting removals of encampments. What staff and partners are involved, and what roles does each have? On what timeline do they occur? What steps, if any, are taken afterwards to clean or repair the site?

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*Display This Question:*

*If Has your DOT taken (or worked with partners to take) any of the following actions regarding homel... = Clearance or sweeps of homeless encampments from right-of-way settings or property [ Current practice ]*

5.1.4 After an encampment has been vacated, is the site secured to prevent it being re-occupied and if so, how? Does the DOT have specific procedures?

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*Display This Question:*

*If Has your DOT taken (or worked with partners to take) any of the following actions regarding homel... = Clearance or sweeps of homeless encampments from right-of-way settings or property [ Current practice ]*

5.1.5 After clearance or abandonment, how frequently do encampments reoccur at the same location?

- Never (1)
- Sometimes (2)
- About half the time (3)
- Most of the time (4)
- Always (5)

*Display This Question:*

*If Has your DOT taken (or worked with partners to take) any of the following actions regarding homel... = Outreach efforts to connect people experiencing homelessness to housing, shelter, and/or services [ Current practice ]*

5.2.1 Please describe the procedure, scope, and timeline of the outreach efforts to the unhoused population, as well as the staff and partners involved in these efforts.

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*Display This Question:*

*If Has your DOT taken (or worked with partners to take) any of the following actions regarding homel... = Outreach efforts to connect people experiencing homelessness to housing, shelter, and/or services [ Current practice ]*

5.2.2 Does the outreach occur?

- Always as part of an encampment clearance/sweep effort (1)
- Sometimes as part of an encampment clearance/sweep effort (2)
- Not usually as part of an encampment clearance/sweep effort (3)

*Display This Question:*

*If Has your DOT taken (or worked with partners to take) any of the following actions regarding homel... = Partnerships with local law enforcement agencies related to homelessness [ Current practice ]*

*Or Has your DOT taken (or worked with partners to take) any of the following actions regarding homel... = Partnerships with social service or non-profit organizations [ Current practice ]*

*Or Has your DOT taken (or worked with partners to take) any of the following actions regarding homel... = Partnerships with state law enforcement agencies related to homelessness [ Current practice ]*

*Or Has your DOT taken (or worked with partners to take) any of the following actions regarding homel... = Partnerships with state, regional, or local government social service or housing agencies [ Current practice ]*

5.3.1 Please list your external partners, the role of the partner organization, and if you have a formal agreement or contract with the partner organization.

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*Display This Question:*

*If Has your DOT taken (or worked with partners to take) any of the following actions regarding homel... = Training of DOT staff on engaging with people experiencing homelessness [ Current practice ]*

5.4.1 Please describe the content of the training for staff related to engaging with people experiencing homelessness, or procedures governing encampments and/or unauthorized use of DOT rights-of-way and who at the agency receives and delivers it.

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*Display This Question:*

*If Has your DOT taken (or worked with partners to take) any of the following actions regarding homel... = Design or modify physical structures, such as bridges or interchanges, to discourage camping, sleeping or access [ Current practice ]*

*Or Has your DOT taken (or worked with partners to take) any of the following actions regarding homel... = Installation of structural elements or landscaping to discourage camping, sleeping or access [ Current practice ]*

*Or Has your DOT taken (or worked with partners to take) any of the following actions regarding homel... = Construction practices to discourage camping, sleeping or access [ Current practice ]*

Q32 Does your agency have design guidelines to prevent unauthorized access to areas or prevent encampments for the following locations?

	Yes (1)
Bridges, tunnels, overpasses, and underpasses (1)	<input type="radio"/>
Highway/freeway interchanges (2)	<input type="radio"/>
Ramps and medians (3)	<input type="radio"/>
Shoulders or adjacent road rights-of-way (4)	<input type="radio"/>
Other (5)	<input type="radio"/>



*Display This Question:*

*If Has your DOT taken (or worked with partners to take) any of the following actions regarding homel... = Design or modify physical structures, such as bridges or interchanges, to discourage camping, sleeping or access [ Current practice ]*

*Or Has your DOT taken (or worked with partners to take) any of the following actions regarding homel... = Construction practices to discourage camping, sleeping or access [ Current practice ]*

*Or Has your DOT taken (or worked with partners to take) any of the following actions regarding homel... = Installation of structural elements or landscaping to discourage camping, sleeping or access [ Current practice ]*

*Or Has your DOT taken (or worked with partners to take) any of the following actions regarding homel... = Maintenance practices to discourage camping, sleeping or access [ Current practice ]*

5.5.1 What policies, practices or procedures related to design, construction, and/or maintenance activities does the DOT have for preventing encampments and unauthorized access to the right-of-way?

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Page Break

End of Block: Block 1

Start of Block: Block 3

6 Are any of the following staff or offices present *within your agency itself* (not including external partners). *Select all that apply:*

Staff who conduct direct/frontline outreach to people experiencing homelessness as their primary job (1)

Staff or office tasked with coordinating homelessness response across the agency and/or in certain regions (2)

Staff or office tasked with liaising on housing policy (3)

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Page Break

7 Does your department collect any data on homelessness? If so, how often? What kind of data (e.g., counts, reports/complaints, surveys)?

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8 Does your agency collaborate with the annual regional point-in-time count of people experiencing homelessness mandated by the U.S. Department of Housing and Urban development?

- Yes (1)
- No (2)
- Not sure (3)

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Page Break

9 Approximately how much does your department spend annually on issues related to homelessness and/or encampments?

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Page Break

10.1 Do local ordinances on homelessness apply on your rights-of-way?

- Yes (1)
- No (2)
- In some places but not others (3)

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Page Break

*Display This Question:*

*If Do local ordinances on homelessness apply on your rights-of-way? = Yes*

*Or Do local ordinances on homelessness apply on your rights-of-way? = In some places but not others*

10.2 Do localities and local law enforcement enforce those ordinances on your rights-of-way?

- Yes (1)
- No (2)
- In some places but not others (3)

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Page Break

11 What have been the primary positive outcomes of your DOT's efforts to address homelessness (specifically encampments and unauthorized access to rights-of-way)? Any lessons learned to share with other DOTs?

*If there were no outcomes, please say so.*

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12 What have been the challenges or issues of your DOT's efforts to address homelessness specifically encampments and unauthorized access to rights-of-way? Any lessons learned to share with other DOTs?

*If there were no challenges, please say so.*

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End of Block: Block 3

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Start of Block: Block 4

13.1 This project will include case examples to illustrate different state DOT regulations, practices, procedures, and policies to manage encampments and unauthorized access to public right-of-way. We will conduct follow-up telephone interviews to discuss aspects of statutes, policies, practices, and procedures for inclusion in the final report and guide. Would your agency be interested in participating in a case example?

- Yes (1)
- Maybe (2)
- No (3)

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Page Break

Display This Question:

If This project will include case examples to illustrate different state DOT regulations, practices,... !=  
No

13.2 Who is the best contact to set up interviews:

Name: (1) \_\_\_\_\_

Title: (2) \_\_\_\_\_

Division, office, or department: (3)  
\_\_\_\_\_

Phone number: (4) \_\_\_\_\_

Email address: (5) \_\_\_\_\_

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Page Break \_\_\_\_\_

14 In your opinion, what specific information, guidance, and resources would you think would be useful to your DOT to address encampments and unauthorized access to the right-of-way?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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15.2 Please include weblinks to any DOT policies, practices, procedures, or documentation on homelessness (upload documents option below).

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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Q33 Please upload any DOT policies, practices, procedures, or documentation on homelessness (upload option).

End of Block: Block 4

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# Appendix D: CoC Survey Instrument

## NCHRP CoC Survey

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### Start of Block: Consent

#### Informed Consent **Dear Continuum of Care Reader,**

Portland State University, under the Transportation Research Board's National Cooperative Highway Research Program (NCHRP) is conducting work related to the Guide for Addressing Encampments on State Transportation Rights-of-Way project (20-129). The objective of this project is to develop a guide of suggested practices for responding to, managing, and deterring encampments on the ROWs for state departments of transportation (DOTs). We are asking continuums of care about their experiences and perspectives about DOT practices as they relate to homelessness. Your input will help us identify practices for DOT activities.

#### **Informed Consent**

You are being asked to take part in a research study. The list below shows the main facts you need to know about this research for you to think about when making a decision about if you want to join in. Please review the information on this page and ask questions about anything you do not understand before you make your decision.

**Voluntary Consent.** You are being asked to volunteer for a research study. It is up to you whether you choose to involve yourself or not. There is no penalty if you choose not to join in or decide to stop.

**Purpose.** The reason for doing this research is to develop a guide of suggested practices for responding to, managing, and deterring encampments on the ROWs for state departments of transportation (DOTs).

**Duration.** It is expected that your part will last for 15 minutes.

**Procedures and Activities.** You will be asked to answer questions in a multiple-choice format.

**Risks.** Some of the possible risks or discomforts of taking part in this study include feeling stress about the current state of homelessness in your CoC, and possibly about professional consequences from participating in the survey. We will try to minimize the stress by keeping the survey brief, and you can skip any question and still continue. We will minimize the risk of privacy by keeping the surveys confidential, and aggregating and anonymizing final reporting.



**Benefits.** Some of the benefits that you may expect include satisfaction in contributing to knowledge about how departments of transportation can respond to people experiencing homelessness living on their properties.

**Participation is voluntary.**

**What happens to the information collected?**

Information collected from you for this research will be used to develop a set of recommendations and structure the guide that outlines best practice examples that support DOTs in their operations while promoting tolerance. The final guide will support DOT staff and practitioners.

**How will I and my information be protected?**

We will take measures to protect your privacy including using encrypted and password access only. Despite taking steps to protect your privacy, we can never fully guarantee that your privacy will be protected. To protect all of your personal information, we will remove identifiable information about you and your CoC. Despite these precautions, we can never fully guarantee that all your study information will not be revealed.

**What if I want to stop being in this research?**

You do not have to take part in this study, but if you do, you may stop at any time. You have the right to choose not to join in any study activity or completely stop your participation at any point without penalty or loss of benefits you would otherwise get. Your decision whether or not to take part in research will not affect your relationship with the researchers or Portland State University.

**Will it cost me money to take part in this research?** There is no cost to taking part in this research, beyond your time.

**Will I be paid for taking part in this research?** Survey participants will not be paid for taking part in this research.

**Who can answer my questions about this research?**

If you have questions or concerns, contact the research team at:

Marisa Zapata, Principle Investigator  
mazapata@pdx.edu  
503-725-5179

**Who can I speak to about my rights as a research participant?**

The Portland State University Institutional Review Board (“IRB”) is overseeing this research. The IRB is a group of people who review research studies to make sure the rights and welfare of the people who take part in research are protected. The Office of Research Integrity is the

office at Portland State University that supports the IRB. If you have questions about your rights, or wish to speak with someone other than the research team, you may contact:

Office of Research Integrity  
PO Box 751 Portland, OR 97207-0751  
Phone: (503) 725-5484  
Toll Free: 1 (877) 480-4400  
Email: psuirb@pdx.edu

Consent Statement I have had the chance to read and think about the information in this form. I have asked any questions I have, and I can make a decision about my participation. I understand that I can ask additional questions anytime while I take part in the research.

**Do you consent to participate in this study?**

- Yes (1)
- No (2)

*Skip To: End of Survey If Dear Continuum of Care Reader, Portland State University, under the Transportation Research Bo... = No*

**End of Block: Consent**

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**Start of Block: CoC Characteristics**

Q2 Please select the name of your CoC. We will group CoCs based on local conditions such as climate for analysis. The name of a CoC or identifying information will be removed from the survey. You may opt to not identify your CoC.

▼ Prefer not to say (1) ... WY-500 Wyoming Statewide CoC (392)

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Q3 Approximately what is the population of the largest urban area that your CoC serves?

- 500,000 residents (1)
- 100,000 to 499,999 residents (2)
- 50,000 to 99,999 residents (3)
- 10,000 to 49,999 residents (4)
- 2,500 to 9,999 residents (5)
- Fewer than 2,499 (6)
- Not sure (7)

End of Block: CoC Characteristics

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Start of Block: People Experiencing Homelessness and Public Land

Q33 In this section we will ask you about people experiencing homelessness in your CoC who are living on or routinely using any outdoor public land or property to meet their basic needs. Outdoor public lands refer to any property owned by local, state, federal, or other government jurisdiction that does not require a door for entry. Living on or using public lands might look like using tents in public parks, resting in a public plaza, staying on boats in public waterways, accessing public toilets to meet all hygiene needs, etc. Please use your best judgment or make your best guess when answering these questions. If you do not know if land is privately or publicly owned, please answer the questions based on any outdoor property use.

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Q4 Within your CoC, are people experiencing homelessness living on or routinely using public lands to meet their basic needs?

- Yes (1)
- No (2)
- Do not know (3)
- N/A (4)

*Skip To: End of Block If Within your CoC, are people experiencing homelessness living on or routinely using public lands t... = No*

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Q5 About how many people experiencing homelessness in your CoC are living on or routinely using public lands to meet their basic needs?

- Fewer than 100 people (1)
  - 101 - 250 (2)
  - 251 - 500 people (3)
  - 501 - 1000 people (4)
  - 1001 - 1500 people (5)
  - 1501+ (6)
  - Do not know (7)
  - N/A (8)
-

Q6 Please select all locations where you see people living on or routinely using public lands to meet their basic needs. People can be sheltering in tents, cars, self made structures, etc.

- Street/sidewalk (1)
- Plazas/town squares (2)
- Bridge/overpass/road (3)
- Park/woods/natural open space (4)
- Waterways (5)
- Other (6) \_\_\_\_\_
- N/A (7)

End of Block: People Experiencing Homelessness and Public Land

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Start of Block: State DOT Responses to People Experiencing Unsheltered Homelessness

Q In this section we will ask you about how your state department of transportation responds to people living on or routinely using lands to meet their basic needs.

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Q7 To the best of your knowledge, how does your state DOT respond to people living on or routinely using lands that are owned or managed by the DOT to meet their basic needs? Select all that apply.

- DOT provides access or connections to social services (1)
- DOT has allowed the use of structures or land to offer shelter (2)
- DOT has provided or allows sanitation services (3)
- DOT allows unsheltered homeless encampments or does not enforce camping bans on DOT lands (4)
- DOT uses a priority system to identify some encampments for removal (5)
- DOT posts notices prior to encampment removal (6)
- DOT conducts encampment removals without posting notices (7)
- DOT upgrades infrastructure to discourage camping (8)
- DOT has a special office within the agency that coordinates the homelessness response (9)
- DOT participates in cross-agency or jurisdictional planning for responding to homelessness (10)
- Do not know (11)
- Other (12) \_\_\_\_\_

End of Block: State DOT Responses to People Experiencing Unsheltered Homelessness

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Start of Block: Relationship between CoC and state DOT

Q35 We are now asking you about the relationship between your CoC and state department of transportation. If you are not sure, please answer the question to the best of your ability.

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Q8 To the best of your knowledge, has your state DOT contacted your CoC about people living on or routinely using lands that are owned or managed by the state DOT to meet their basic needs?

- Yes (1)
  - No (2)
  - Do not know (3)
  - N/A (4)
-

Q24 To the best of your knowledge, does your CoC or a partner social service agency work with the state DOT to do any of the following? Select all that apply.

- Help conduct encampment removals on lands owned or managed by the DOT (1)
- Send staff to observe DOT activities or interactions with people experiencing homelessness (2)
- Provide contacts or service connections during encampment removals conducted by the DOT independently from the DOT (3)
- Offer shelter beds to people living on or routinely using DOT lands independently from the DOT (4)
- Fund social service or other community based organizations to provide support to DOT activities (e.g., outreach, encampment removal) (5)
- Fund DOT to implement homelessness related programs (6)
- Meet regularly with DOT staff members (7)
- Attend inter-agency/jurisdictional meetings where DOT staff are present (8)
- Other (9) \_\_\_\_\_
- Do not know (10)
- N/A (11)

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Page Break



Q10 Compared to other priorities within your CoC, how important do you consider working with your state DOT?

- Not at all important (1)
- Slightly important (2)
- Moderately important (3)
- Very important (4)
- Extremely important (5)
- Do not know (6)
- N/A (7)

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Q11 What opportunities and challenges do you see when or if you did work with the DOT?

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Q12 How can DOTs best respond to address people experiencing homelessness on properties that they own or manage?

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End of Block: Relationship between CoC and state DOT

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Start of Block: Willingness to meet with researchers during a site visit

Q13 Would your CoC be willing to meet with representatives from our research team during a possible site visit?

- Yes (1)
- No (2)
- It depends (3) \_\_\_\_\_
- Other (4) \_\_\_\_\_

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Page Break

Q14 Would you be willing to connect us with social service providers, or advocates who work with people living outside for interview purposes?

- Yes (1)
- No (2)
- It depends (3) \_\_\_\_\_
- Other (4) \_\_\_\_\_

*Skip To: End of Block If Would you be willing to connect us with social service providers, or advocates who work with peop... = No*

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Page Break

Q15 Please provide us with your contact information if you are able to meet with or connect us to relevant people in your CoC to better understand the work of DOTs.

Name (1) \_\_\_\_\_

Phone Number (2) \_\_\_\_\_

Email Address (3) \_\_\_\_\_

**End of Block: Willingness to meet with researchers during a site visit**

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