

CATALYSTS FOR CONNECTION:
AN INDIVIDUAL ACTOR-LEVEL PERSPECTIVE
ON INTERMEDIARY ROLES IN SUSTAINABILITY TRANSITIONS

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ABSTRACT

Intermediaries are essential in sustainability transitions. These “in-between” actors broker relationships, transfer information, coordinate processes, and configure outcomes within sociotechnical systems. While existing literature primarily frames intermediaries as organizational actors, this thesis responds to calls for more individual-actor perspectives within transitions research, and thus reframes intermediaries as individuals to illustrate the importance of the people who play these connecting roles. This qualitative analysis of semi-structured interviews identifies individual intermediaries within the empirical context of New York State’s energy transition. Four intermediary roles—Bridgers, Conduits, Aligners, and Shapers—are developed to conceptualize specific relational actions and functions. Intermediaries are enabled by multiple individual attributes and contextual factors, emphasizing the importance of both subjectivity and structure to this functional role. By making explicit this otherwise unarticulated individual intermediary role, these findings provide the basis to recognize and support individual intermediary actors, whose micro-level actions provide key relational infrastructure to catalyze and sustain transformative change.

BIOGRAPHICAL SKETCH

Frieda Lorel Kay was born and raised in Ithaca, New York. At age 16, Frieda moved to the U.K. to attend the United World College of the Atlantic, where she lived and studied alongside 350 students from 90+ countries, and received her International Baccalaureate. She came away from this rich international experience with an appreciation for the diversity of individual perspectives and deep interest in dialogue across differences.

Frieda received her Bachelor's degree in engineering from Brown University. While at Brown, she worked with other students to advocate for the creation of an interdisciplinary center for climate and energy on campus. Her own cross-disciplinary curriculum included courses on environmental studies, neuroscience, eastern philosophy, and sociology, in addition to engineering and math. This combination of concepts reinforced Frieda's interests in pragmatic solutions for complex sustainability challenges, with a foregrounded recognition of the importance of the human dimension of change, from understanding individual minds to societal shifts. By the time of her senior capstone project on biogas production from food waste at wastewater treatment facilities, Frieda found herself most interested in the diverse interests of actual people who were enacting change, from the elected officials passing regulations to the facility operators responsible for the biogas generators. This signified her shift away from engineering and the technical dimensions of a problem, and instead reflected her growing motivation to better understand the individual people and social contexts from which solutions emerge.

After graduation, Frieda continued to develop her curiosity about the people and processes that drive change. From her observations embedded in Berlin's start-up scene, to her role as a community manager in Providence, to her position in human resources at a solar company in Los Angeles, Frieda repeatedly noticed how good ideas could be so easily hamstrung by an apparent lack of appreciation for the importance of human interactions. These experiences emphasized the need for effective connection and collaboration in order to address complex challenges, and led Frieda to apply for graduate school to study the human dimensions of sustainable resource management.

At Cornell, Frieda again crafted a cross-disciplinary curriculum with sustainability-related courses on climate adaptation, infrastructure resilience, and the food-water-energy nexus, as well as collaborative process-oriented courses on decision analysis, community dispute resolution, stakeholder engagement, and design thinking for complex systems. Her graduate coursework, which spanned ten departments and six colleges, created a coherent narrative and an intellectual trajectory that reinforced her conviction in the necessity of interdisciplinary collaboration to address complex sustainability problems. Frieda's academic focus was anchored at the nexus of social science, planning practice, and systems engineering, which reflect the academic perspectives of her advisor and two committee members who grounded and guided her graduate research on intermediary actors in sustainability transitions.

This thesis represents the culmination of Frieda's interdisciplinary academic journey and signifies the starting point for what comes next.

In memory of Oma, the original Lorel

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INTRODUCTION

The path to a sustainable future is paved by the people and processes of today. Whether decarbonizing our energy sources, securing our food supply, or building more resilient water infrastructure, sustainability transitions involve large-scale transformative shifts in socio-technical systems that require coordination and connection across sectors, organizations, communities, and individuals. Individual actors in socio-technical systems are much more than users and consumers of technologies and resources: people also play essential connecting roles within transitions as intermediary actors, who work in between other actors to positively influence transition processes.

The premise for this thesis is that sustainability transition processes are governed and implemented on the micro-level by individual people as social actors embedded within these socio-technical systems. Intermediaries are essential connecting actors within these systems and contribute to advancing transition processes. These two perspectives on transitions are unified with an individual actor-level perspective, which focuses on the individuals in intermediary roles.

The guiding motivation for this research is to identify and highlight individual actors and their actions within the context of sustainability transitions, in order to illuminate and conceptualize the intermediary role as an informal, underrecognized, and often implicit role at the level of individual people and micro-level actions.

First, I review some of the literature on intermediaries in sustainability transitions from three areas within transitions research - innovation systems, governance transitions, and overall sustainability transitions. I then shift from a systems-based perspective of intermediaries to a role-based analysis with a focus on relational intermediation processes in the context of research on other relational roles. Based on additional perspectives on transitions from organizational and social psychology, I conclude the literature review with a further refined focus of an individual actor-level perspective on intermediaries and their specific micro-level actions within a given sustainability transitions context.

This thesis builds upon existing research on intermediaries in sustainability transitions and integrates perspectives from organizational and social psychology, and planning practice to focus on the role of intermediary actors at the micro-level of individual people and their actions and perspectives. This research examines multiple actor-level perspectives on the functions, roles, and efficacy of intermediaries around the deployment of large-scale renewable energy technology, in the specific micro-level case context of a large-scale solar project.

LITERATURE REVIEW

Sustainability transitions are large-scale transformations in socio-technical systems that “shift to more sustainable modes of production and consumption” (Markard et al., 2012, p. 956). Socio-technical systems are networks of technologies and infrastructures as well as social actors, institutions, practices, and norms (Köhler et al., 2019). These complex multi-dimensional systems involve connections and relations between multiple actor groups navigating shifting interests and priorities (Moss, 2009).

The body of literature on sustainability transitions is a rapidly expanding area of interdisciplinary research that emerges from multiple disciplines, and is beyond the scope of this literature review to engage in depth. For the sake of this thesis, the essential point about sustainability transitions is the need for connections, and thus connecting actors, between and within these interconnected and interdependent socio-technical systems of technologies, institutions, and social actors.

Intermediaries are actors that operate in between other actors to make these connections and positively influence transitions (Kivimaa et al., 2019). Intermediary actors can be organizations, platforms, or individual people. Research on intermediaries in transitions tends to focus more on intermediaries as organizational actors, and takes a systems-level perspective instead of discussing micro-level dynamics. Furthermore, much of this existing research is focused on the impact of intermediaries on transitions, instead of an analytic focus on the intermediary role itself.

My guiding question for this literature review is oriented around understanding the intermediary role itself through specific actions and functions: what are these actors actually doing in practice that advances overall transitions? This role-centric perspective is useful because it can provide the language and understanding to identify what intermediaries do, how that's shaped by the actors in the role, situations where they may be needed, and how intermediation can be supported.

In the first three sections below, I draw from research on intermediaries from three different perspectives – innovation systems, governance of transitions, and an overarching systems-level view on sustainability transitions – in order to understand the intermediary role in the context of sustainability transitions. The different conceptualizations of intermediaries between these three areas are primarily about the overall purpose and impact of intermediaries on sustainability transitions. For example, intermediaries in the context of innovation are more oriented around supporting knowledge production and technology dissemination, whereas in governance, the conceptualization of intermediaries has a political component as they navigate different interests to support courses of action. However, these distinctions are ultimately less important in my effort to understand the intermediary role itself. Thus, the purpose of my engagement with these three areas of literature is to distill the consistencies about intermediary actors across these different research contexts, in order to synthesize an overarching definitional framework for intermediary actors in transitions.

With this distilled definition from the literature, I pivot from the focus on intermediaries in transitions to better understand the intermediary role and what intermediation looks like

in practice on the micro-level dynamics of individual actions, instead of systems-level change. Based on the intermediation activities in the intermediary literature in the context of other relational roles, I identify four overarching intermediation processes that provide language for understanding and identifying intermediation actions in practice. I further refine my focus within this micro-level context to consider the intermediary actors behind these actions, which introduces my shift from conceptualizing intermediaries as organizations to intermediaries as individual actors, and sets up the individual actor-level perspective that guides my thesis research.

An individual actor-level perspective on intermediaries in sustainability transitions acknowledges the importance of the individual people who play these intermediary roles and their subjective perspectives and attributes that shape their actions. Through this perspective, I focus on the human dimension of intermediation and highlight the micro-level practices and relational dynamics of intermediation. This contributes to the larger body of literature on intermediaries in transitions by demonstrating how individual intermediaries have effects on micro-level dynamics that scale up to systems-level transition processes that advance sustainability transitions.

Intermediary Actors in Sustainability Transitions

Scholarship on intermediaries in transitions is diverse in discipline and scope, and varies substantially in the definition of these actors, and their functions and actions. Intermediary research spans a variety of contexts, such as innovation systems (Howells, 2006; van Lente et al., 2003; Hargreaves et al., 2013), governance of transitions (Hodson et al., 2013; Moss, 2009; Medd & Marvin, 2013), as well as overall perspectives on sustainability transitions

(Mignon & Kanda, 2018; Kivimaa et al., 2019; Kanda et al., 2020). As mentioned in the introduction, the distinctions between these three conceptualizations of intermediaries is more about the intermediary's purpose and impact in transitions, and less on the role itself, so my focus is on the treatment of intermediaries within areas of research rather than distinctions between these contexts. The following three sections briefly introduce some of the research on intermediaries within each of these areas in order to distill the consistencies across contexts to better understand the intermediary role.

Existing research on intermediaries in sustainability transitions explores many types of intermediary actors that serve different functions in a variety of contexts from innovation, to transitions governance, to advancing systemic sustainability transitions more broadly. Intermediaries are seen as crucial actors that work in between other actors and play a key role in transitions by coordinating efforts, translating information, and navigating diverse interests, among many other activities.

The following three definitions are selected from papers in each of the three sections below, and reflect some of these differences and similarities on the conceptualizations of intermediaries from these different perspectives.

Three different definitions of intermediaries from transitions literature:

❖ Innovation Systems:

- *An organization or body that acts as an agent or broker in any aspect of the innovation process between two or more parties. (Howells, 2006, p. 720)*

❖ Sustainability Transitions:

- *Actors and platforms that positively influence sustainability transition processes by linking actors and activities, and their related skills and*

resources, or by connecting transition visions and demands of networks of actors with existing regimes in order to create momentum for socio-technical system change, to create new collaborations within and across niche technologies, ideas and markets, and to disrupt dominant un-sustainable socio-technical configurations. (Kivimaa et al., 2019, p. 1072)

❖ **Governance of Transitions:**

- “Organizations that act in-between the traditional relationships between utilities, regulators, and consumers” (Moss, 2009, p. 5)

One immediate similarity throughout these definitions is the identity of intermediaries as an agent of connection between other actors. The sections that follow explore each of these definitions in more detail, with a focus on understanding the intermediary role and specific actions within these different contexts.

Intermediaries in the context of innovation

In research on innovation within sociotechnical transitions, intermediaries are conceptualized as organizations that “connect, translate and facilitate flows of knowledge” (van Lente et al., 2003, p. 2). Van Lente et al. (2003) build on the preexisting concept of intermediary organizations within innovation systems to introduce the concept of systemic intermediaries as essential actors in the context of system-wide sociotechnical transitions.

One essential element of innovation intermediaries is their position embedded in the innovation process. Howells (2006) defines intermediary actors as “An organization or body that acts as an agent or broker in any aspect of the innovation process between two or more parties” (Howells, 2006, p. 720). This definition frames intermediaries as organizations or bodies, positioned between two or more parties, and grounded in any aspect of the innovation process. While this conceptualization is intentionally broad to reflect the

breadth of intermediaries, the direct connection of these actors to the innovation process is embedded in this definition (Howells, 2006).

In the context of innovation systems in transitions, intermediary actors are described as predominantly organizational actors rather than individual people (Howells, 2006; van Lente et al., 2003; Hargreaves et al., 2013.; Silva et al., 2018) Even when the actions and purpose of intermediaries are more specific and localized, (for example, community energy development), intermediaries are still described as *organizations* that foster these connections on the ground (Hargreaves et al., 2013).

The **actions and functions** of intermediaries in innovation systems are also directly linked to the innovation process itself. Whether the intermediaries in innovation are operating at the systems level (c.f. van Lente et al., 2003, etc.) or at the local level (c.f. Hargreaves et al., 2013), innovation intermediaries are often involved with facilitating knowledge transfer and technology development.

Intermediaries have important functions in multiple phases of the innovation process, from the initial conceptual phases to innovation diffusion. In early phases, intermediaries can actively generate and shape technological innovation directly through exchanging information and best practices, or indirectly by aligning interests and expectations around technology (van Lente et al., 2003). Intermediaries also function as connectors between other actors involved in innovation systems by fostering collaboration and partnerships (Silva et al., 2018). Intermediaries are also essential in innovation diffusion, by connecting projects and networks together, and between producers and users (Aspeteg & Bergek, 2019;

Klerkx & Leeuwis, 2008). Three key systemic functions of intermediary organizations in the innovation process were identified by van Lente et al. (2003): “articulation”, “alignment”, and “learning” (p. 11). These functions correspond to the *articulation* of demands in the early stages, *alignment* of actor interests and networks, and *learning* as a feedback mechanism to support innovation processes (van Lente et al., 2003). Although these concepts are developed and discussed in the context of innovation systems, the basic functions of articulating demands, aligning actors, and learning from feedback can be extrapolated to broader contexts.

In short, research on innovation systems views intermediaries as key actors across all levels, contexts, and phases of innovation. Intermediaries are framed as organizational actors, and perform actions and functions to provide knowledge, broker and mediate between actors, align interests, and foster collaboration, among other functions. In this area of research, the purpose of intermediaries in transitions are closely linked to innovation, technology, and knowledge.

Intermediaries in the context of overall societal sustainability transitions

Research on intermediaries explicitly in the context of overall sustainability transitions research builds upon research in innovation systems, but takes a much broader focus on large-scale changes in sociotechnical systems. Intermediaries are seen as “catalysts that speed up change” in the transition to a more sustainable future (Kivimaa et al., 2019, p. 1063). Building upon earlier conceptualizations of intermediaries, several frameworks aim to characterize these actors and their contribution specifically in sustainability transitions (Kivimaa et al., 2019; Kanda et al., 2020; Mignon & Kanda, 2018).

Since sustainability transitions are frequently discussed within the framework of the multi-level transition framework at niche, regime, and landscape (c.f. Geels, 2002), much of the systems-based research on intermediaries fits into this framework as well. The typology developed by Kivimaa et al. (2019) considers intermediaries at multiple transition levels. Some research focuses on systems-level intermediation (Kanda et al., 2020) while others focus on the more niche, local, and diffusion elements of intermediaries (Hargreaves, 2013; Bergek, 2020).

In their synthesis of literature on intermediaries in sustainability transitions, Kivimaa et al. (2019) propose a composite definition of intermediaries in sustainability transitions as:

“Actors and platforms that positively influence sustainability transition processes by linking actors and activities, and their related skills and resources, or by connecting transition visions and demands of networks of actors with existing regimes in order to create momentum for socio-technical system change, to create new collaborations within and across niche technologies, ideas and markets, and to disrupt dominant unsustainable sociotechnical configurations”(Kivimaa et al., 2019, p. 1072).

As in the innovation literature, intermediaries are consistently framed organizational actors and platforms, rather than individual people. This is in part because the functional purpose of intermediaries is similarly framed within the systems-level dynamics of sustainability transitions. The definition from Kivimaa et al. (2019) also highlights a number of key intermediation functions and activities. Some are similar to those found in the innovation literature, such as aligning visions and articulating demands, but others expand beyond innovation to include the disruption of “unsustainable sociotechnical configurations” (Kivimaa et al., 2019, p. 1072).

This definition also highlights an important feature of sustainability transitions, which is that there is an implicitly temporal and normative directionality of forward movement in the transition towards a more sustainable future. There is no universal agreement on which trajectory is best, nor is there agreement on what exactly constitutes “sustainability”, but the presumption is that sustainability, as a concept, is a normatively positive future state to achieve. Intermediaries fit into this context, then, of helping to expedite the actualization of this more sustainable future reality.

Intermediaries in context of transitions governance

Research on intermediaries in transitions emerges from literature on the governance of transitions, in addition to innovation systems and sustainability transitions research more broadly. Similarly to innovation and sustainability transitions, intermediaries in the governance of transitions are primarily described as organizations. In the context of the governance of low-carbon transitions, Hodson et al. (2013) describe intermediaries as organizational actors at multiple scales of governance with a range of functions and actions from providing educational information to installing technology to advocacy and network building (p. 1405). Organizations can be explicitly affiliated with the government, non-governmental actors, or semi-government organizations (Hodson et al., 2013).

Whereas in innovation contexts, the purpose of intermediaries is oriented around the knowledge or technology of innovation, in governance, the conceptualization of intermediary actors has a political dimension, and much of the actions and functions involve navigating relationships between actors, creating platforms for collaboration and governing courses of action (Hamann & April, 2013; Medd & Marvin, 2008). One definition

of intermediary actors in the context of governance defines intermediaries as “organisations that act in-between the traditional relationships between utilities, regulators, and consumers” (Moss, 2009, p. 5). This definition reflects the positionality of governance intermediaries in between other institutional actors, and highlights these interrelationships as key spaces for intermediation action.

Much of the actions of intermediaries in governance involve navigating the interests and priorities of these different actors. Intermediaries in governance contexts actively make connections, enable relationships, and mediate between actors (Medd & Marvin 2008; Hodson et al., 2013; Moss, 2009; Hamann & April, 2013). In contrast to other research that portrays intermediaries as neutral third party actors, some of the literature on governance recognizes that intermediaries actively shape and define the relationships between other actors (Medd & Marvin 2008).

The actor-centric perspective of governance contexts invites an explicitly relational perspective on the activities of intermediaries. Like in other contexts, facilitating dialogue and building new partnerships appears to be a central intermediation activity throughout the literature (Hamann & April, 2013). In the political context of governance, other intermediation actions include advocacy, lobbying, and messaging (Hodson et al., 2013). While more indirect than brokering a direct partnership, these perception-shifting activities are still influencing and shaping relationships between actors.

Intermediaries also bridge priorities and objectives at different levels of governance, or within levels of sociotechnical systems. For example, intermediaries can translate higher

level objectives from governmental entities into projects at the niche level, or to shape project implementation (Hodson et al., 2013). The capacity of intermediaries is also shaped by—and responsive to—actor interests, at various levels (Hodson & Marvin, 2012). Intermediaries also can play a role in actively brokering new regulations, or translating research or regulations into practice (Moss, 2009).

Like innovation, which focuses both on systems-level transitions and local-level diffusion, governance similarly spans scales from macro-level systems governance to micro-level action. Intermediaries play an important role at the ground level of governance, such as coordination implementation projects and materials procurement (Medd & Marvin, 2008). Though this micro-level context of project implementation is distinct from much of the framing on systems-level sustainability transitions, they are still directly linked because progress in transitions are enacted at the micro-level by the implementation and governance of projects. Just as intermediaries in the context of sustainability transitions contribute to catalyzing the transition towards a more sustainable future, intermediaries in governance are seen in similarly collective terms, to “influence the pursuit of collective goals undershifting governance structures” (Moss, 2009, p. 1).

Throughout all of the research cited above, intermediaries are presented as essential actors in sustainability transitions, whether in the context of innovation, governance, or more broadly impacting transitions overall. Innovation intermediaries are defined in direct relation to the innovation process, whereas literature from a governance perspective focuses on the implementation of projects and technologies, and navigating the political dimensions of an array of institutions, actors, and interests. Although there is variation on

the contextual details, there are substantive similarities in the conceptualization of intermediaries and their activities across these literatures. One common assertion throughout the literature is that intermediaries are essential actors, though inconsistently defined, and thus worthy of study for greater understanding.

Definitional Framework: Positionality, Purpose, and Processes

While there is clearly substantive variation across and within these three general areas of scholarship, my goal with this review is to distill the essential characteristics of the intermediary role itself, independent of specific context in transitions.

The key similarity across these three areas of intermediary research and the definitions excerpted above, is the **positionality** of the intermediary in between two or more actors, whether those actors are in the innovation process, institutional governance arrangements, or in sustainability transitions more broadly. This in-between-ness and connecting functionality is core to the definition of intermediaries. True to their name, intermediaries are defined by this “inter” positionality, although the context in-between which they are embedded—and nature of the role itself—varies substantially. As discussed above, intermediaries are also primarily discussed as organizational actors in this literature, although individual actors are mentioned in some diffusion and project contexts.

The primary difference across these three areas center around the **purpose**, or impact of the intermediary actors and their actions on transitions. Both the innovation and governance definitions are centered on the actor positioned within a specific context. However, the definition from Kivimaa et al (2019) on intermediaries in sustainability

transitions focuses on large-scale societal change with a more explicit purpose, i.e. disrupting “unsustainable socio-technical configurations” to create momentum for sustainable change (Kivimaa et al., 2019, p. 1072). While some innovation intermediaries are also linked to large-scale societal change, the overarching purpose of intermediaries in innovation systems centers around the innovation process. In the literature on governance, the focus of the intermediary is often oriented around navigating interests, priorities, and relations between actors involved in transition processes. However, across these different contexts, one key commonality across purposes is that intermediaries play an important function in the context of a larger system, with impacts beyond their immediate spheres of action.

Although the functional purpose of intermediaries varies between contexts, the specific actions and types of **activities** of intermediaries has substantial overlap between these areas of literature. Intermediary actors are often identified by their functions – i.e. more by *what they do* than by *who they are* (Bergek, 2020; Kivimaa et al., 2019). Therefore, the activities that constitute “intermediation” are essential to understand in order to conceptualize the intermediary role itself. “Intermediation” as a noun comprises the array of actions and activities that intermediary actors undertake to fulfill their functions and purpose in context. I use the term *intermediation processes* to refer to the variety of these specific intermediation actions in aggregate. Whether acting as an agent or broker, linking, connecting, creating new collaborations, there are commonalities in the types of connecting activities in which intermediaries engage as seen in the papers cited above. Intermediation is more than shifting relations between actor groups – intermediaries also

facilitate the flow of knowledge and resources. These intermediation activities, and their functions in context, provide the basis for understanding the intermediary role itself.

Table 1 below shows a selection of intermediary actions that are described in the literature cited above on intermediaries to represent the variety within the three areas of research on innovation systems, governance of transitions, and sustainability transitions more broadly. Since the intermediary role comprises both the actions and functions of intermediaries, I categorized these activities into groups based on the general orientation of action, which indicates the function of the intermediary activity within the immediate context of action.

For example, some intermediation activities are focused on resources – transferring resources, providing information, or translating knowledge – so I label these as “resource-oriented” to indicate a functionality related to resources. Other activities are oriented around people, perceptions, and relationships, such as mediating between interests or brokering collaborations. Another third set of activities emerged as process-oriented intermediation, such as connecting networks, identifying problems, and aligning actors. Finally, while some literature portrays intermediaries as neutral actors independent of outcome, other papers include descriptions of intermediaries who actively configure and directly impact outcomes, such as shaping visions, developing products, designing policies, or setting expectations. I use the term “outcome” to refer to all of these direct objects of active intermediation, whether it’s a tangible outcome like a product design or intangible, like shaping expectations and future visions. The distinction is that the intermediation action has direct action on some outcome, versus the process-oriented intermediation activities, which are focused on the means, rather than the ends.

Of note, each of these four quadrants in Table 1 has example activities sourced from all three perspectives of the transitions literature mentioned above. This means that despite the differences in perspective between governance, innovation, or overall sustainability transitions, intermediaries in all three areas of this literature are seen to take on activities that serve functions around resources, relationships, processes, and outcomes.

Table 1. Intermediation Activities in Transitions Literature

Intermediation Activities In Transitions <i>categorized by orientation of action</i> G=Governance, ST=sust. Transitions, IV=innovation	
<p>Resource-oriented</p> <ul style="list-style-type: none"> ○ IV: connect, translate and facilitate flows of knowledge (Van Lente, 2003) ○ ST: Mobilize resources (Kanda, 2020) ○ G: Education and trainings (Medd & Marvin) ○ G: Translate research into practice (Moss 2009) ○ Provide guidance and information (Howells 2006) ○ Exchange of information and best practices (Hargreaves) 	<p>Relationship-oriented</p> <ul style="list-style-type: none"> ○ ST: Create new collaborations (Kivimaa) ○ G: Mediate, make connections, enable relationships (Medd & Marvin) ○ IV: Manage partnerships (Hargreaves) ○ Advocacy, promotion, lobbying (Medd & Marvin) ○ Act as a mediator (Howells, 2006) ○ Broker collaborations (Howells 2006) ○ Mediate conflicts (Hargreaves)
<p>Process-oriented</p> <ul style="list-style-type: none"> ○ G; Connect innovation networks to improve communication flow (Moss 2009) ○ IV: Alignment of actors and possibilities (Van Lente) ○ ST: Connecting visions and demands (Kivimaa) ○ IV: Feedback and learning process support (Van Lente) ○ Identifying problems and issues (Moss) 	<p>Outcome-oriented</p> <ul style="list-style-type: none"> ○ G: Translate priorities into the design of local projects (Hodson, 2013) ○ IV, G: Shaping expectations (Hargreaves, Hodson) ○ ST: Develop strategic visions (Kanda) ○ G: Designing and implementing regulations (Moss)

These categories are neither comprehensive, nor mutually exclusive, however, they do provide a helpful framework to differentiate the types of intermediation activities and

processes, which aids in understanding the intermediary role and identifying intermediary actors as the agents of these actions.

Based on the definitions and observations above about the positionality of intermediaries, their purpose in transitions, and these different types of intermediation activities, I distill these three broad characteristics to conceptualize and define intermediary actors. Despite the areas of divergence across these different areas of intermediary research, these three characteristics are consistent across the reviewed literature.

First, the **positionality** “in-between” other actors is an essential defining characteristic of the identity of an intermediary actor (Moss, 2009) and establishes the importance of the intermediary as a relational role. Second, the specific actions of the intermediary align with the activities described in aggregate as intermediation **processes**, as summarized in Table 1 above. Third, the intermediary’s actions have a functional impact in their context of action that contributes either directly or indirectly to a broader **purpose** in transitions, for example, providing information to foster innovation, shaping visions to advance sustainability transitions, or mediating interests to support governance. These three characteristics of “positionality, process, and purpose” are represented graphically in Figure 1 and elaborated below.

Figure 1. Definitional Framework For Intermediary Actors



- The **positionality** of the intermediary as an “in-between” actor is consistent throughout all the literature, and is itself inherent in the name. This characteristic also speaks to the context-dependency of intermediaries – they are defined by their relational context of action.
- The **process** element of this definitional framework recognizes the intermediary role as an active and dynamic role that can comprise any variety of actions that align with the intermediation activities described above.
- The **purpose** of intermediaries varies based on context, but what makes “Intermediaries in Sustainability Transitions” different from other third-party actors is that these intermediaries have a functional purpose in a greater systems context beyond their immediate context of action that contributes to advancing sustainability transitions.

Based on this definitional framework, I suggest the general definition of intermediaries from the literature as “organizations, platforms, or individuals that act in-between two or more entities to positively influence transitions.” This definition situates intermediaries in the context of sustainability transitions, and also frames intermediaries as a relational role, with intermediation activities grounded in a specific context of action, in between other actors.

I now transition my analytical focus from transitions-context of intermediaries to the micro-level dynamics of intermediaries to better understand the intermediary role itself by focusing on the relational activities of intermediaries, which sets up my concluding consideration of the individual actors behind these actions.

Relational Intermediation Processes

While the research on intermediaries discussed in the sections above focuses on the impacts on transitions from a systems-level perspective, other research on intermediaries centers on the role itself, and the specific actions of intermediaries within a micro-level context. For example, Stewart & Hyysalo (2008) describe the relational role intermediaries play between suppliers and adopters of technologies using the framework of social learning in technological innovation, rather than the framework of sociotechnical sustainability transitions. As in the transitions literature, they describe intermediaries as actors that operate in between other actors – in this case, users and producers of technology. They identify three key intermediary processes of “Facilitating, Configuring, and Brokering” (Stewart & Hyysalo, 2008, p. 295) which provide a relational view of intermediation. The descriptions of these three processes align with many of the activities outlined in Table 1

above – “Brokering” is seen as a bridging position between actors, for example to raise support – similar to the other “relationship-oriented” activities above. “Configuring” involves “*creating content, setting rules and regulations, shaping goals and expectations*” (Stewart & Hyysalo, 2008, p. 307), which aligns with the “outcome-oriented” activities from transitions literature. Third, “Facilitating” involves “*Educating, gathering and distributing resources*”(Stewart & Hyysalo, 2008, p. 306), which aligns with the “resource-oriented” intermediation activities described above. The explicit focus on the relationality of these intermediary activities reinforces the nature of the intermediary role itself as a relational role. This role-based approach to intermediary actors centers on intermediaries in their immediate context of action, rather than their purpose in the context of the broader sociotechnical systems of transitions.

Framing the intermediary role as a relational actor role draws parallels to other relational roles, like boundary spanners, brokers, and other “middle actors” (Parag & Janda, 2014). Given the scope of this thesis, I will not go into depth into this rich area of literature of relational middle actor roles that spans organizational research (Haas, 2015), social networks (Spiro et al., 2013), management (Halevy et al., 2019), healthcare (Long et al., 2013), and public policy (Williams, 2002) among others. However, there are two key points to make in relation to this middle-actor literature, which informs the direction of my thesis – first, distinguishing the intermediary role from other relational roles, and second, using the parallel activities from these other relational roles to define the intermediary role at the level of an individual actor.

I distinguish the *intermediary* actor role from other middle actor roles (brokers, boundary spanners, etc.) by defining the intermediary role as intrinsically connected to a broader context of systems change. Although there is a lack of clear consensus in the literature around the terminology for any of these middle actor labels, terms like “boundary spanner” are often applied to describe a role confined within one interorganizational context, or even within one organization (Haas, 2015; Williams, 2002). In contrast, I interpret the role of intermediaries to have an inherent embeddedness in a broader systems context, with the contribution to advancing transitions. Thus, even if the discussion is locally oriented around the micro-level actions of intermediaries, the intermediary role itself is inherently seen as a part of a greater whole, with reference to sociotechnical systems.

While the *purpose* of an intermediary is intrinsically tied to a broader context, the actual *activities* of intermediaries in the transitions literature have substantial overlaps with the specific actions of many other third-party actors. For example, Spiro et al. (2013) define three key relational brokering processes as “transfer”, “matchmaking”, and “coordination”, which have clear parallels to the intermediary activities identified in the transitions literature. “Transferring” occurs between two disconnected actors, and is oriented around providing information and resources (Spiro et al., 2013), which is similar to the “resource-oriented” intermediation activities identified in Table 1. The other two brokering processes from Spiro et al., (2013) have similar overlaps: “Matchmaking” involves enabling a direct connection between actors, which aligns with the “relationship-oriented” intermediation activities, and “coordination”, which enables cooperation between actors without direct ties between them, aligns with many of the “process-oriented” activities,.

Since intermediary actors are identified based on what they do, these descriptions of relational activities provide the basis for the framework I use to identify individuals in intermediary roles for this thesis. I combine relational brokering processes described by Spiro et al. (2013) and the relational intermediation processes described above by Stewart and Hyysalo (2008) in order to establish clear terminology for the four sets of intermediation activities previously identified in Table 1 (which are grouped by function/orientation, i.e. *resource-*, *relationship-*, *process-*, or *outcome-*oriented actions.) This terminology enables me to explicitly discuss these different types of intermediation processes and establishes the foundation of my role-based discussion of intermediaries.

The four sets of intermediation activities identified in Table 1 from the transitions literature have clear overlaps with these three relational brokering processes from Spiro et al. (2013) (“transferring”, “matchmaking”, “coordination”) and the three relational intermediation processes from Stewart and Hyysalo (2008) (“brokering, configuring, and facilitating”) as described above. Additionally, there are several overlaps in the activities within these two different frameworks on relational processes. “Facilitating” from Stewart & Hyysalo (2008), and “Transferring” from Spiro et al. (2013) are similar in their focus on provision of resources. Stewart & Hyysalo (2008) describe facilitating as “educating, gathering, and distributing resources” and Spiro et al. (2013) describe transferring as when the broker “conducts information or other resources from one to another who cannot directly be reached” (Spiro et al., 2013, p. 131) These two intermediation processes align with many of the “resource-oriented” intermediation activities highlighted in Table 1 above.

A second overlap between the two frameworks is “brokering” and “matchmaking”. “Brokering” from Stewart & Hyysalo (2008), is described as a relationship-focused bridging position, similar to “Matchmaking” from Spiro et al. (2013), which is also focused on relationships and direct ties. “Brokering” is a more expansive term from Stewart & Hyysalo (2008), which also encompasses *mediating* between existing relationships and *messaging* to influence perceptions of actors in relation to each other and raise support. Brokering thus encompasses matchmaking, and is visibly aligned with the “relationship-oriented” activities from the transitions literature listed in Table 1.

“Configuring” from Stewart and Hyysalo (2008) is focused on a product or outcome, whether designing technology, configuring content, setting rules, shaping expectations. Stewart and Hyysalo (2008) explain that “*Configuration is not only technical but also symbolic: intermediaries provide an interpretation of the product, the meanings that people give to a technology, but they also listen to users, sponsors and suppliers and attempt to modify the project*” (Stewart & Hyysalo, 2008, p. 307). Whether designing a tangible product or shaping intangible expectations, “configuring” is about an outcome, with the collaborative and relational dynamics between actors at the input of this intermediation process.

In contrast, “Coordination” is oriented more around *processes* than products or outcomes. Spiro et al. (2013) defines coordination as “directs action... without need for direct contact” (Spiro et al., 2013, p. 131). These types of coordinating activities are much more process-oriented, helping align and navigate different interdependent actors into alignment with some overarching process. This is similar to the “process-oriented”

activities listed in Table 1, such as *alignment of actors and possibilities* (van Lente, 2003), or *project coordination* (Medd & Marvin, 2008).

Combined, these two frameworks of relational processes from Stewart and Hyysalo (2008) and Spiro et al. (2013) provide essential terminology to discuss the four types of intermediation processes, based on the activities previously identified within transitions literature. Table 2 below displays these four relational intermediation processes, Transferring, Brokering, Coordinating, and Configuring: “*Transferring*” comprises resource-oriented intermediation activities, such as those identified in the transitions literature; “*Brokering*” refers to relationship-oriented activities; “*Coordinating*” encompasses process-oriented activities; “*Configuring*” as an intermediation process entails outcome-oriented activities. The general “function” of each intermediation process is based on the orientation of actions (i.e. the function of an intermediary might be “to transfer resources” or “to broker relationships”).

Table 2. Relational Intermediation Processes

Note: example activities sourced from transitions literature (see Table 1), process names sourced from relational roles research (Stewart & Hyysalo (2008), Spiro et al.(2013))

<p>“TRANSFERRING” Resource-oriented activities</p> <p>Transferring Resources:</p> <ul style="list-style-type: none"> ● <i>sharing information</i> ● <i>providing training</i> ● <i>distributing funding</i> 	<p>“BROKERING” Relationship-oriented activities</p> <p>Brokering Relationships:</p> <ul style="list-style-type: none"> ● <i>matchmaking new partnerships</i> ● <i>mediating between interests</i> ● <i>messaging to influence perceptions</i>
<p>“COORDINATING” Process-oriented activities</p> <p>Coordinating Processes:</p> <ul style="list-style-type: none"> ● <i>aligning contributions</i> ● <i>facilitating communication</i> ● <i>securing support</i> 	<p>“CONFIGURING” Outcome-oriented activities</p> <p>Configuring Outcomes:</p> <ul style="list-style-type: none"> ● <i>shaping projects</i> ● <i>designing products</i> ● <i>negotiating agreements</i>

These intermediation processes are “relational” because all the associated activities involve engagement with other actors, with the intermediary actor operating in between them. My emphasis on relational intermediation processes thus situates the intermediary in the context of other middle actor roles, which enables a shift in analytical focus from intermediary impacts on transitions towards a role-based analysis, and what this role actually looks like in practice. Furthermore, since intermediary actors are more often defined based on their actions and functions in context, these intermediation processes can also be used to identify intermediary actors themselves, as the agents behind specific micro-level actions in transitions.

Micro-Level Actions & Individual Intermediary Actors

A micro-level perspective within sustainability transitions refers to the specific actions and everyday practices of individual actors (Murto et al., 2020). This is in direct contrast to the macro-level systems-based perspective that characterizes much of transitions research (Köhler et al., 2019). While some research on these micro-level transitions dynamics focuses specifically on practices and everyday actions (Shove & Walker, 2010), others call for an explicit focus on actors as individual people, and apply perspectives from social psychology to understand individual actor-level processes and behaviors in transitions (Bögel & Upham, 2018). Furthermore, since individual behavior is shaped by the subjective perceptions and interpretations of these social actors, whose perspectives are socially constructed and individually contextualized (Stedman, 2016), the subjectivity of the human experience plays an important role shaping micro-level actions in transitions as well. Thus,

this individual actor-level perspective is an important and under-researched perspective to understand micro-level dynamics within sociotechnical systems (Upham et al., 2019).

In sum, the *micro-level dynamics* of transitions focus on individual actors and actions of everyday practice. These actions emerge from the behaviors of individuals as social actors embedded in sociotechnical systems, who act based on their personal subjectivities and are enabled by their individual competencies and characteristics. Therefore, while micro-level dynamics broadly refers to individual actors and their actions, an *individual actor-level perspective* focuses specifically on individual people and incorporates the role of subjectivity to understand the behaviors of individual people operating at the micro-level of transitions.

While research on individual actors in transitions is relatively sparse (Upham et al., 2019), research on individuals as *intermediary* actors is even more difficult to find. Although some of the literature on intermediaries in transitions does define intermediary actors “organisations or individuals” (Hargreaves et al., 2013, p. 870), very little attention is given to what the intermediary role actually looks like in practice at the micro-level of individual actors and actions (Kanda et al., 2020; Kivimaa et al., 2019; Bergek, 2020). Furthermore, I could find virtually no intermediary research that considers how the personal subjectivities, characteristics, and competencies of these individuals shape their intermediation activities.

Therefore, my thesis combines the individual actor-level perspective discussed above with the intermediation processes identified from the research on intermediaries in

sustainability transitions in order to understand the micro-level actions and individual perspectives of individual actors in intermediary roles. The intermediation processes in Table 2 can be used to identify instances of intermediation activities, and thus the individual people as the agents of these specific actions. A better understanding of the micro-level dynamics of these intermediation processes, through the perspectives of individuals, demonstrates how individuals shape transition processes, and also strengthens the conceptualization of the intermediary as an individual actor role. This role-based analysis, which comprises the identity, actions, and functions* of individual intermediary actors, provides a basis to identify what intermediaries do and situations where they are needed.

**A note on terminology:* throughout this thesis, I use “transitions context” or “systems context” to refer to the macro-level systems analytical perspective on transitions, and “action context” or “context of action” refers to an intermediary’s immediate context of action around the micro-level of individual actors and actions. In the macro-level systems context of sustainability transitions, intermediary actors can be defined using the terms “positionality, process, and purpose” as described above. However, at the micro-level, which refers to the actions of individual actors and everyday practice, these definitional characteristics are better described by “position”, “actions”, and “function”. The overarching descriptive term of intermediation “processes” comprise a variety of “activities”, which are further specified at the micro-level of individual “actions”. Similarly, the overarching “purpose” in transitions is re-centered on a micro-level around an individual’s “function” in their given context of action. These position, actions, and function terms are better used to

describe specific intermediation at the micro-level, which then maps on, in aggregate, to the overall system-wide transitions context.

Towards An Individual Actor-Level Perspective

This literature review started with a brief synthesis of existing literature on intermediaries in sustainability transitions in order to distill an understanding of the intermediary role itself. Intermediaries are viewed as essential connecting actors in sustainability transitions across multiple research areas on intermediaries in transitions, whether in the context of innovation, governance, or overall system transitions. Although there were some differences between these areas in terms of the purpose and impact of intermediaries in transitions processes, there were very consistent conceptualizations of intermediary activities across these three areas of literature. Notably, I found consistent patterns in the types of activities attributed to intermediaries in transitions, regardless of empirical context. I categorized and summarized these activities by their orientation of actions – either resource-oriented activities, relationship-, process-, or outcome-oriented – which describe an active role that plays a function in context.

Based on these consistencies across the literature, I expanded upon existing definitions of intermediaries to identify a definitional framework that characterizes intermediary actors by their *positionality* in between other actors, their actions that align with the identified intermediation *processes*, and their ultimate *purpose* that serves to advance overall transitions. With this conceptual understanding of the role, and the specific processes that identify what intermediaries actually do, I connected the intermediation activities from the transitions literature to the activities of other relational roles. I applied terminology from

two frameworks on relational intermediation (Stewart & Hyysalo, 2008) and relational brokering (Spiro et al., 2013) to define four intermediation processes: “*Transferring*” comprises resource-oriented intermediation activities; “*Brokering*” refers to relationship-oriented activities; “*Coordinating*” encompasses process-oriented activities; “*Configuring*” as an intermediation process entails outcome-oriented activities. These four processes provide the framework to understand what intermediaries do in practice, identify intermediary actors, and conceptualize the intermediary role.

These three fundamental shifts in focus and framing move my research beyond the reviewed literature on intermediaries in transitions, and towards the structure of my thesis framework on an individual actor-level perspective. The shifts are summarized in Figure 2 below.

Figure 2. Research Framework

PREVIOUS RESEARCH	 CURRENT THESIS FOCUS
Actors as Organizations	Actors as Individual People
Systems -Level Dynamics	Micro -Level Dynamics
Intermediary Impacts on Transitions	The Intermediary Role

Much of the existing research on intermediaries in sustainability transitions is based on contextualizing intermediaries within a broader system view of transitions, as described above. This perspective most often considers intermediaries as organizational – rather than individual – actors, and highlights the function of intermediaries in broader systemic

transition processes, rather than focusing on micro-level actions and dynamics of individual intermediary actors.

Thus, to guide my thesis research, I shift my framing of intermediary actors to define actors as individual people instead of organizations. While there is minimal discussion of intermediary actors framed as individual people in the literature, even less attention has been paid to the identity and actions of the individual actors who fill these roles. Furthermore, individual intermediaries are social actors in complex systems, and thus their subjective perspective on their roles and context influence their actions and capacities.

Alongside this individual actor-level focus comes a reorientation of context to focus on the micro-level dynamics of individual actors and their actions in practice, instead of the systems-level dynamics in transition literature. The focus on micro-level dynamics is guided by the question of what the four intermediation processes actually look like in practice.

Finally, the overarching analytical focus of this thesis is reoriented around understanding the intermediary role itself as an individual actor role, instead of the dominant focus on the impacts of intermediaries on transition processes. This role-based approach provides the basis for an expanded recognition of the actions and functions of intermediary actors in context, and the importance of the individuals who play these roles.

These three shifts in focus and framing set up the two research questions that guide the remainder of this thesis.

RESEARCH QUESTIONS, CONTEXT & METHODS

This thesis research builds upon existing research, and the frameworks on intermediation processes and intermediary actors I developed in the literature review, to apply an individual actor-level perspective to the intermediary role in order to better understand the micro-level dynamics of individual intermediary actors, and conceptualize the intermediary role itself as an individual actor role.

These two research questions below elicit specific details around the identity, actions, and functions of individuals in intermediary roles, as well as the contextual and personal factors that enable the role. My responses to these research questions structure this thesis, and provide the basis for understanding the intermediary role as an individual actor role within a given transition context.

Research Questions

RQ1: Who are the individual actors in intermediary roles that connect multiple actors, issues and/or interests to fulfill certain functions? What specific actions do they take to fulfill these intermediary functions?

RQ2: What personal attributes and contextual factors enable and constrain the actions, objectives, and efficacy of individual actors in intermediary roles?

Empirical Context

This research uses New York State's energy transition as an empirical context within which to identify and study intermediary actors in sustainability transitions. Focusing on a single given solar energy project within this transitions context provides a rich network of actors

and interests, within which to study intermediation as a relational and dynamic role operating between different actors and interests in pursuit of implementable solutions.

New York State has some of the most ambitious energy transition goals in the country, seeking to have 70% of its electricity provided by renewable sources by 2030 and 100% by 2040 (State of New York Senate-Assembly, 2019). The Climate Leadership and Community Protection Act (CLCPA) established these electricity generation goals, alongside technology-specific targets for minimum generation capacity of offshore wind, solar, and storage. New York's energy transition therefore depends on widespread successful implementation and operation of renewable energy projects across the state.

To achieve these transition goals and renewable energy generation targets, New York State provides funding to organizations within the state bureaucracy such as the New York State Energy Research and Development Authority (referred to in this thesis as the "State Energy Agency"). The State Energy Agency administers the "Renewable Energy Standard" request for proposals process, which solicits proposals from private developers to construct utility-scale renewable energy projects such as solar facilities and offshore wind. The State Energy Agency awards contracts to proposals that rank highest according to several solicitation criteria, and then oversees the development process to ensure the terms of the contract are upheld. The State Energy agency contracts to purchase the renewable energy credits that are created by the new renewable electricity generation capacity that the developer's project will bring online. Thus, New York State has a vested interest in the success of these utility-scale projects in order to reach their energy goals.

Utility-scale solar facilities are distinguished primarily by size from community solar and other smaller installations, but there is not a universally agreed upon precise definition. However, a key element of these utility-scale solar projects, which are often under private, corporate ownership, is that the generated electricity is connected directly to the grid for long-distance transmission and use off-site (Nilson and Stedman, 2022). Utility-scale solar facilities require substantial amounts of cleared land on low slopes, as well as proximity to transmission lines, among many other siting considerations (Sward et. al, 2021). Because of these land requirements and other prerequisites for a viable project location, private developers have pursued siting of utility-scale projects in the rural areas of upstate NY (Nilson and Stedman, 2022). Siting permits for these utility-scale projects are granted by another state-sponsored entity, referred to in this thesis as the “State Siting Board.” While both the State Siting Board and State Energy Agency are funded by the state, the Siting Board is independent from the State Energy Agency in its review of proposals and decisions about granting permits.

In addition to contracting and coordinating with private developers, the State Energy Agency provides support and resources to communities around the state to help them prepare for the prospect of utility-scale solar development. Support includes publicly available educational resources like the New York State Solar Guidebook, which provides information to local governments that cover topics like basic terminology, permitting processes, taxation considerations, and mitigation of impacts (NYSERDA, 2017), as well as direct engagement with communities and technical assistance for local governments on issues such as developing a local solar law.

There are three dominant institutional interests at play within each of these utility-scale projects: the State of New York, represented in this thesis context by the State Energy Agency and the State Siting Board, the private project developer, and the local host community. While the objectives of developers and host communities vary widely in projects throughout the state, the overarching interests are aligned as follows. The State's primary interest and mandate is to meet the energy transition goals. The private developer's primary interest is to get their proposed project permitted, constructed, and operational in line with their contract with the state. And the Host Community is primarily concerned with the impacts, risks and benefits to their local community. This empirical context provides a rich opportunity to explore some of the individuals in intermediary roles operating between and across these institutional actor interests.

My choice to select a single utility-scale solar project as a case study provides an empirical context that highlights issues around technology diffusion (dissemination of utility-scale solar), as well as the governance implications of implementing energy transition goals at multiple levels of government (state and local levels).

Case Selection

To identify a specific utility-scale solar project in New York State, I contacted several individuals familiar with solar at a state level, including representatives of the State Energy Agency, which has a central role within this empirical sustainability transition context.

I had informal conversations with two individuals, each with differing perspectives on solar development in New York: one person represented the State Energy Agency's community outreach program that supports local governments across the state prepare, and thus has perspective on multiple project, and the other individual, a grassroots activist and consultant, works to help communities actively benefit from solar development, and had previously contracted with private developers for public outreach work.

There were two key factors for case selection. First, the project had to be far enough along for there to be multiple individual actors involved with the project, and with enough of a timeline for there to be some history of action for them to reflect upon. I asked for any insights into projects that stood out as particularly interesting, and that might provide a good case study for my thesis research to understand the people involved in planning processes. Although smaller community-scale solar projects were considered, I opted to select a utility-scale solar project since those are more directly related to New York State's energy transition goals, and were likely to enlist a wider range of actors with more distance and potentially more need for intermediation across greater boundaries compared to more local community-scale solar projects.

Both individuals with whom I spoke had the same project suggestion – a particular utility-scale solar project in Western NY that was one of the few that was farthest along in the permitting process. They both cited it as a relative success story, due in large part to the positive relationship between the town and the developer, and substantive progress in the permitting process. It is important to note that no utility-scale solar facilities have yet been constructed in New York State at the time of this research. This reflects the lengthy

permitting process as well as the relative recency of the state's renewable energy goals. Therefore, the milestone of action for having a permit granted by the State Siting Board positions this particular solar project among the most advanced projects in the process, as one of very first permitted utility-scale solar projects in New York State. This project context thus appeared a promising opportunity to study some of the intermediary actors and actions that may have contributed to its relative success.

To protect the privacy and confidentiality of the actors involved in the process, the case project, host community, and private development company shall henceforth be referred to by the anonymous titles of "The Solar Project," "The Town," and "The Solar Company".

Data Collection & Analysis

Recruitment & Sampling

Participants were identified through purposive and snowball sampling from publicly available documents and information about The Solar Project, and referrals from initial participants and other stakeholders, including the two individuals who assisted in case selection.

The only attribute-based selection criteria were that participants had to be adults 18+ that were professionally or personally engaged in some form with The Solar Project. Beyond that, care was taken to ensure that participants represented state, local, and private

interests. This was necessary to highlight perspectives at different institutional levels/sectors and from different phases of the planning process.

All participants were recruited via email with a personalized variation of my recruitment message (example in Appendix 1) which presented an invitation to discuss their perspectives on and involvement with The Solar Project

Semi-Structured Interviews

The primary data for this research are ten semi-structured interviews conducted between May and September, 2021. All interviews were scheduled via email exchange and conducted virtually as Zoom calls - some with video, and some voice only. Interviews ranged from 45-90 minutes, depending on time constraints of each participant and their level of engagement.

I used a semi-structured interview guide (Appendix B) to guide participants through three basic areas of discussion: first, their personal involvement and role within the project; second, their perceptions of the project itself and related issues; and third, their understanding of and relationships with other actors involved with the project. I started each interview with an invitation for the participant to tell the “story” of their involvement with the project, beginning with the first moment they heard of the project. In each interview, I emphasized the need to understand a variety of different perspectives from people involved with the project, so participants were explicitly geared to elicit personal perspectives, rather than describing details of the project itself.

Because the intermediary role is not an explicit formal role at the individual level, as discussed in the literature review, I made no direct mention of intermediaries or intermediation. Nor did I explicitly ask about key intermediation processes. Instead, I focused the interviews around eliciting the essential actors, interests, and objectives in the case with specific details on participant actions and involvement. In this way, details on intermediation emerged from the descriptions of actions within each interview. Furthermore, since all participants were talking about the same project, multiple participants shared similar perspectives on other actors, which corroborated these actions across narratives. This triangulation between multiple actor narratives also served to increase the validity of the interview data, in addition to my member checks to clarify and confirm within each interview.

Data Analysis

Data analysis occurred concurrently with data collection. Interviews were recorded through Zoom and stored on Cornell's secure servers as well as downloaded locally. Immediately following each interview, I wrote a memo to capture some of the affect and other relevant contextual elements of the interview. These memos, in addition to the consistent use of the interview protocol, support the reliability of these data. All analysis took place within word documents, spreadsheets, and Notion, which is a database and note-taking software.

I used both an inductive and deductive approach to the data analysis. From each interview, I identified specific incidents and emergent categories to elicit key themes around the project and planning process, and actors involved. This inductive approach provided a basis

for RQ1 by establishing the key players, interests, and issues, and the actors who work across these interests.

I also used a deductive approach for RQ1, based on the intermediation processes identified in the literature, to identify specific instances of intermediation within the actions and activities described by participants. I categorized these actions in alignment with the intermediation processes established in the literature (transferring, brokering, coordinating, and configuring, see Table 2). I then used the definitional framework of positionality, process, and purpose (Figure 1 above) to identify the intermediary actors as the agents behind these intermediation actions.

I then grouped actors together based on the type of intermediation process to synthesize, distill, and conceptualize four intermediary roles that each represent the actions and functions of these intermediaries within the context of this project. This more broadly illustrates the actions and functions of individuals in intermediary roles. I also selected quotes from the interviews that illustrated the personal perspectives and subjectivities of the individual intermediaries. From all this, I made some general observations about the nature and emergence of the intermediary role.

To further capture the individual actor-level perspective, I selected two individuals who emerged as central actors throughout multiple interviews to highlight in greater detail through extended quotes from the narrative interviews. My analysis of these narratives was loosely based on the concept of “practice stories” (Forester, 2012) in which first person narratives are used to illustrate the practical strategies and specific actions of a

professional's daily practice. These extended narratives provided ample material to highlight both the specific actions of these individuals in intermediary roles, as well as the opportunity to observe how their personal subjectivities and individual attributes shaped their work. This narrative analysis bridges RQ1 and RQ2 by illuminating both the specific actions and functions of these two intermediaries, as well as identifying enabling personal attributes, and an exploration of individual subjectivity reflected in a narrative context.

For RQ2, which encompasses both individual attributes and contextual factors, I inductively identified factors that appeared to enable or constrain intermediary action and cross-referenced these actions between multiple participant interviews to provide a rich description that reflects factors from multiple perspectives. Since the research design was oriented around capturing multiple perspectives of the same project from different actors, there was substantial overlap in the descriptions of elements of the project, and multiple perspectives on key actors involved. I used a process of triangulation to compare similarities and differences in these perceptions across interviewees. I then synthesized these observations and instances into four categories of contextual and individual factors that appeared to support intermediation efforts.

Ethics & Privacy

While the focus of this project is on professional actions that occur in the public arena, there are still ethical considerations. Relationships and trust are crucial elements for these professionals, so there are certain details that participants may be unable or uncomfortable to disclose. The assurance of confidentiality and anonymized responses—and anonymizing the entire project—helps prevent undue risks to the participant's professional and personal

reputation. Another delicate element was that multiple interview subjects knew each other—as we might expect in a project that focuses on relationships between actors—so I was repeatedly asked whether I’d talked to certain people yet, especially with reference to two of the central players. Although I never mentioned anyone else by name or confirmed or denied any content from other interviews, I did acknowledge whether I’d connected yet with certain people. However, The content and perspectives of other interviewees themselves remained completely confidential.

Furthermore, to protect participant privacy and confidentiality, I removed all identifying details around town or company names, I use the singular “they” as a gender neutral pronoun, and I replaced all participant names with pseudonyms, which are based on their formal position in this project context. I introduce the participants with these “reference roles” in tandem with their formal positions in Part 1 below.

FINDINGS

PART 1) Project Context: Actors, Issues, and Interests

The findings outlined here in Part 1 set the stage with the project context required for the analysis of intermediaries that follows in Part 2. Together, these first two chapters respond to my first research question, which is: *Who are the individual actors in intermediary roles that connect multiple actors, issues and/or interests to fulfill certain functions? What specific actions do they take to fulfill these intermediary functions?* The following sections provide the needed context on “actors, issues, and interests” that enables the identification of

intermediation activities, and thus intermediary actors, in Part 2. Also, the project issues and quotes in Section 1.4 provide the contextual groundwork for the narrative analysis in Section 2.3, as well as for the response to RQ3 on enabling factors, as discussed in Part 3.

1.1 Institutional Context & Individual Actors

The ten participants interviewed for this thesis are introduced below, labeled individually by their “reference roles” in Figure 3. These “reference roles” loosely indicate the nature of the participant’s formal position within this context, and are used as pseudonyms throughout this thesis. Although each participant has their own constellation of individual interests and perspectives, they are each situated, based on their employment, within the interests of one of the three primary institutional players in the context of New York’s Energy Transition – the State government, the Local host communities (“The Town”), and the Private project developers (“The Solar Company”).

Each of these three institutional players has overarching interests that govern and shape the planning process. New York State’s primary interest is advancing the State’s Energy goals, which broadly encompass all the renewable energy projects in the state, and the associated contracts and permitting processes. The Solar Company’s primary interest is broadly oriented around the successful development of specific individual projects in various phases of development (which may be more than one project at a time in different locations). The primary local interests are based on ensuring that The Solar Project brings benefits to the local community and mitigates negative impacts, especially, when it comes to the County’s perspective, with regards to appropriate land use planning.

Figure 3. Individual Actors & Institutional Interests

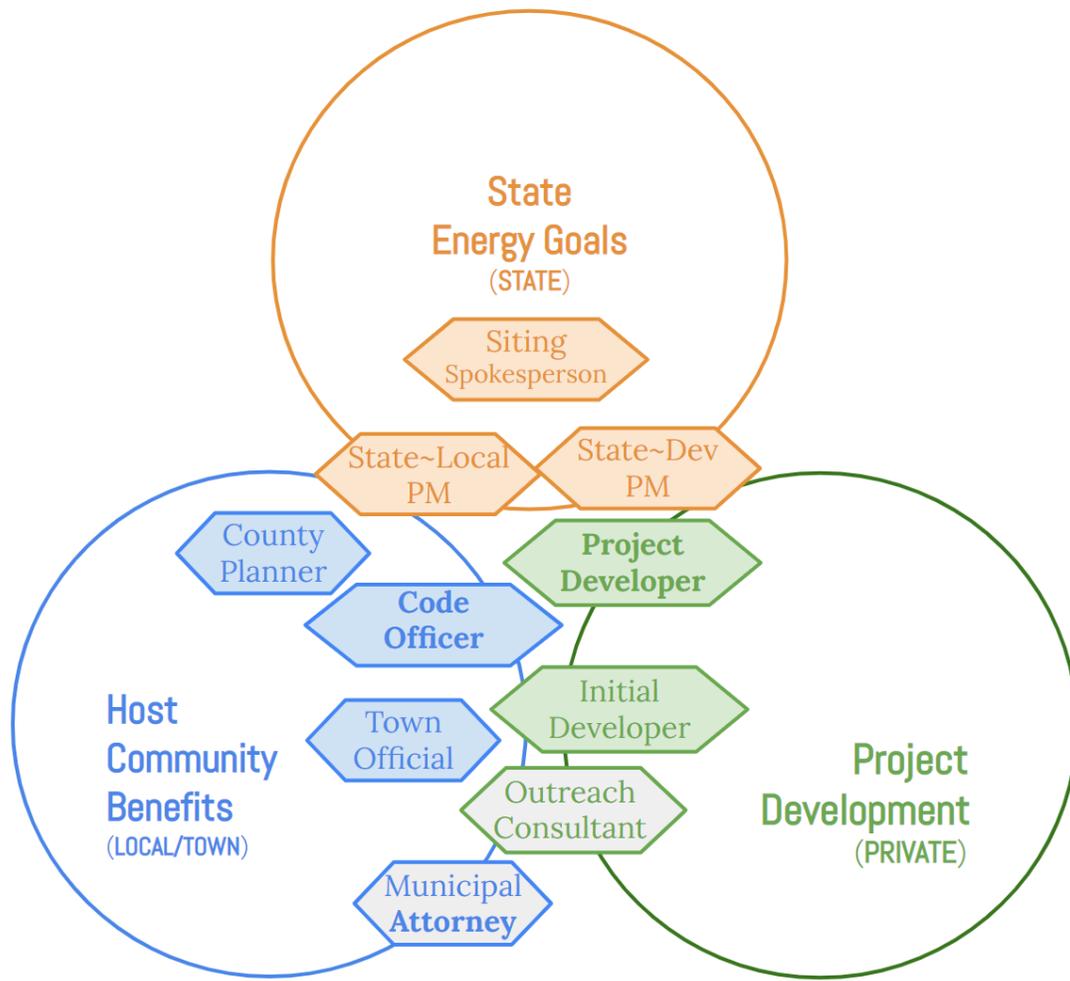


Figure 3: Three circles represent three primary institutional interests. The ten participants (individual actors) are labeled according to their “reference role”, color-coded according to their primary institutional affiliation, laterally positioned to roughly indicate boundaries of interactions. Vertical position does not indicate any hierarchy. *Note: The Municipal Attorney and Outreach Consultant have gray interiors to represent their contractor status.

The State~Local Program Manager (“**State~Local PM**”) and State~Developer Project Manager (“**State~Dev PM**”) are two individuals employed by the “**State Energy Agency**”, which itself is an intermediary organization that works with State, Local, and Private interests to advance the Energy Transition Goals. The State~Local PM and State~Dev PM

work between the state interests with local governments and developers, as indicated by their respective abbreviated reference roles. The “**Siting Spokesperson**” represents the State’s Siting Board, a separate entity that assesses and decides whether to grant siting permits to proposed utility-scale renewable projects. All three of these individuals are professionally associated with the primary objective of the State of NY: to advance the Energy Transition goals.

On the local level, the “**Code Officer**” and “**Town Official**” both live and work in “**The Town**”, and have deep vested interests professionally and personally in the benefits to and protection of the town. The “**Municipal Attorney**” is retained by the Town Official to work specifically on The Solar Project, and, as a Municipal Attorney, they are aligned with the goal of ensuring solar development works to benefit and protect the local communities. The “**County Planner**” is employed by the County Planning Board, whose interests are more broadly based at a county scale around providing support for all the towns within “**The County**” around the solar development of solar laws and guidance for land-use planning.

Finally, in the private sector, the “**Project Developer**”, “**Initial Developer**”, and “**Outreach Consultant**” are all affiliated with “**The Solar Company**”, whose orientation and objectives rest in the successful permitting, construction, and operation of an economically viable and profitable project with minimal levels of community opposition that could obstruct progress. Community support is important to this development company, because they are invested in a long-term relationship with the community, and also benefit from the continued good reputation for other projects in the state.

1.2 Project Overview and Origin Story

Each interview started with a question about the participant’s first moments of involvement with the project. In the three “scenes” that follow, I stitch together each participant’s response to this question, which presents an “Origin Story” as an overview of The Solar Project through the eyes and experiences of the ten participants.

This Origin Story also functions as an introduction for each of the ten participants – henceforth referred to as “actors” – in the context of their initial involvement with the project. Each of the ten actors is introduced by their pseudonyms/ “reference roles” in parenthetical italics, which reflects their professional position/formal role in the project context. Selected quotes originate from the interviews with the participants mentioned. Several moments are also corroborated by the Public Engagement Plan in the Project’s public records, which logs interactions between the developers and other stakeholders. The narrative below also demonstrates an important and relatively unique fact about The Solar Project, relative to other utility-scale projects: this project originated first at the local level, and from there, it evolved into a larger project with state involvement.

SCENE 1: Solar in Town

*The **Initial Developer** meets the town **Code Officer**, and the **Town Official** retains the **Municipal Attorney***

The story of this project (“**The Solar Project**”) begins in 2017, when a local solar developer (“**Initial Developer**”) connects with the Code Enforcement Officer (“**Code Officer**”) of a small town in upstate New York (“**Town**”) to explore the possibility for a community-scale solar development.

At this time, the Town has no solar law on the books, but the Code Officer's supervisor encourages them to "run with it and see where it goes". The Code Officer works to develop a local solar law that aligns with the Town's existing planning documents, while the Initial Developer reaches out to local landowners to secure land leases.

The Code Officer introduces the Initial Developer to the Town Board, which responds favorably to the potential benefits from solar. The Deputy Town Supervisor ("**Town Official**") contacts a Municipal Attorney ("**Municipal Attorney**") to participate in a "general scoping session" with the developers to explore the issues, which evolves into a long-term relationship with the Municipal Attorney representing the Town's interests with the evolving development project.

SCENE 2: Private Developers & Public Outreach

*The Initial Developer partners with the **Project Developer**, who hosts a public meeting attended by the **County Planner**, and hires the **Outreach Consultant**.*

As the Initial Developer secures land leases for the project, they're also searching for a larger company to take their initial on-the-ground legwork to the next level and develop the project. After several calls with other potential companies, the Initial Developer partners with an established renewable energy development company ("**The Solar Company**"). A crucial deciding factor for the initial developer is that The Solar Company appears committed to long-term ownership of the facility, has a long-term perspective and is committed to the region.

The Initial Developer introduces the Senior Manager of Development ("**Project Developer**") to the Code Officer and to the Town. The Code Officer asks the developers to host a public open house about solar for the local community and region. Attendees include a planner from the County Planning Department ("**County Planner**"), who is eager to learn about the increasing interest in solar development seen by several towns within their rural upstate NY county ("**The County**"). The Project Developer also hires a Community Energy Consultant ("**Outreach Consultant**") to help build up a local presence in the Town and engage with the community, and to communicate about the benefits of the project to build public support. As the Project Developer works with the Town to build trust within the local community, they also start to prepare an application for the State's request for proposals for utility-scale renewable energy facilities.

SCENE 3: Local Project Meets State Energy Goals

The **State-Developer PM** manages the contract with The Solar Company, the **State-Local PM** provides assistance to local governments, and the **Siting Spokesperson** is the public face of the State Siting Board.

The State Energy Agency awards a contract to The Solar Company to develop The Solar Project. A project manager on the Renewable Energy Development Team (“**State-Developer PM**”) is assigned to manage the contract, and meets regularly with the Project Developer to ensure that the development process is “in compliance with the performance requirements” to generate the renewable energy to meet the State’s energy goals.

Also within the State Energy Agency, the program manager of the Local Government Support Program (“**State-Local PM**”), reaches out to local governments across the state to offer assistance and resources to help them prepare for hosting a utility-scale renewable project. In this case, there was already active engagement within The Town prior to the State’s involvement. The State-Local PM is therefore also able to learn from The Code Officer’s work in The Solar Project, and share some of those insights with other communities across the state, in addition to providing financial resources to support The Code Officer to act as a local Solar Coordinator.

The “**State Siting Office**” is a newly-appointed regulatory body, independent from the State Energy Agency, which issues the siting permits necessary to begin construction on any utility-scale renewable energy facility. The “**Siting Spokesperson**” represents the State Siting Office in media and public engagement across the state.

When The Solar Project is finally granted a siting permit by the State Siting Office, it is among the very first utility-scale solar projects to be permitted under The State’s energy goals. The project is cited by multiple actors as a good example of a strong partnership between the developers and the local community.

This composite origin serves as a partial timeline of the project, from the initial conversation between the Initial Developer and the Code Officer, through to the most recent milestone of receiving the Siting Permit from the State’s Siting Office. It also shows how each actor has varying types of engagement with this project – proximally (e.g. the Project Developer “on the ground” vs the State-Dev PM at the state level), temporally (e.g. initial developer securing leases vs late stage involvement of siting board) and

professionally (e.g. the Outreach Specialist is hired specifically for this project, whereas the State~Local PM manages multiple programs across the state.) Furthermore, although intermediaries are not discussed explicitly until Part 2, several of the actions described above indicate evidence of intermediation (e.g. when the Initial Developer “introduces” the Project Developer to the Code Officer and Town Official to broker that relationship.)

In addition to introducing the ten individual actors, this narrative also introduces several other important *organizational* actors within the larger spheres of interests. “**The Solar Company**” is a multinational renewable energy development company, and the employer of the individual Project Developer. The State Energy Agency is the state-level intermediary organization tasked with implementing the goals set by the New York State government itself, where the State~Local PM and State~Developer PM both work. And, on the local level, both the Town and the County are separate institutional actors.

In section 1.1, participants were introduced in the context of three overarching spheres of interests of the State, Local, and Private Developer. Although the focus of this research is the roles and actions of individual actors, it’s important to recognize these individuals in the context of these institutions, including the organizations that employ them. These institutional interests and contexts have important influence over each individual actors’ personal and professional objectives and priorities.

1.3 Actor Objectives & Interests

In this section I use “objectives” to refer to forward-looking purposive goals that drive action (*what are they trying to do?*), and “interests” to refer to the underlying goals or preferences that shape action (*i.e. why are they trying to do it?*).

Each individual’s professional objectives were first and foremost aligned with their institutional affiliation. As expected, “Local” actors were concerned about ensuring the project would benefit the local town, the “State” actors were oriented around reaching the state’s goals, and the “Private” developers were primarily focused on moving the project forward towards implementation. However, while these institutional interests shaped the actors’ primary professional objectives, many individuals expressed alignment with multiple objectives: the two most-referenced fundamental objectives across participants as a whole were to advance renewable energy and provide benefits to local communities, often discussed in tandem. While the primary objectives of the *developers*, acknowledged by themselves and others, were to move a viable project forward, even these business objectives were still couched within the overarching energy and community goals.

On the *local level*, the Town Official shared multiple objectives aligned with supporting Town interests, some directly related to a utility-based approach to host community benefits to see if solar development “*is something [our town] can use*” like “*revenue tax base to help stabilize taxes, looking at adding town-wide water*”, as well as the perceived indirect reputational benefits of hosting a large scale solar project “*One of our goals was to bring attention to [our town] as a leader in solar as a small community*” (Town Official). At the county level, the County Planner’s objectives were also in service of supporting the local

communities: *“to meet the needs of all the towns identified by the board... to provide resources for supporting the towns... [and] to help [the towns in the county] end up where they’d like to be with land use planning.”*

The three *state-level* actors were foremost aligned with the objectives of reaching the state’s energy transition goals (*“try to find middle ground for the better of the Climate Act Goals”*, State~Dev PM) , and also reflected the importance of the managerial functions of state-level organizations. For example, the Siting Spokesperson described the objectives of their office as *“to give a streamlined process, so developers know what to expect and how to expect it... to make sure these are sited properly with the same types of environmental review and community input... and to ensure everyone in the project knows timelines and metrics”*. This also reflects a positive intention of how process-oriented work involves coordination and communication between actors to reach a mutual understanding.

In many cases, the two central objectives of advancing renewable energy while benefiting communities were explicitly acknowledged as being interlinked. The Program Manager for the Local Government Outreach within the State Energy Agency reflected that the overall goal of the project was to *“provide clean energy for New York State to help us meet our goals and at the same time provide benefits to the community that’s hosting it so that everyone’s happy about it”* (State~Local PM). This reveals both the multi-pronged objectives of the project, as well as a more subtle acknowledgement that an unhappy community will negatively impact the transition goals. In the case of this individual, there seemed to be a genuine alignment with the importance of supporting local communities, but in the

context of other actors, community benefits could be seen more as a need to pacify local communities rather than actively support and uplift.

A similar sentiment on the importance of both advancing renewable energy and community benefit was echoed by the Project Developer, who, reflecting on their career in project development, said “*At first, development was all about the technical side of a project... but over time you kinda start realizing your number one success factor is the public - are the people supportive of your project or not.*” This again reflects the recognition of the interconnectedness between social and technical objectives.

Another distinction is between professional objectives and personal interests. For example, while the Code Officer cites alignment with the town’s primary interests of emphasizing local benefits in siting decisions, i.e., seeing “*what renewable energy could truly bring*”, they also reveal that they personally support renewable energy: “*Me, personally, I support renewable energy.... Let me rephrase: I support renewable energy if sited smartly and built correctly*” (Town Code Officer). They quickly amend this personal support for renewable energy to include the caveat of “*if sited smartly and built correctly*”, which reflects the Code Officer’s dual commitment to the overall goal of renewable energy as well as their commitment to mitigating negative impacts of the local development and protecting the interests of the town. This personal support for renewable energy from both the Code Officer and the Town Official is not an inevitability in the energy landscape of upstate NY, where many other towns have local officials openly opposed to renewable energy development.

The distinction between personal and professional objectives is also notable in the two “external consultant” actors, the Outreach Consultant (hired by the Project Developer) and the Municipal Attorney (hired by the Town Official). These individuals were each primarily aligned with their employer's interests, but had less of a personal stake in the specific project itself. For example, the Outreach Consultant cited their personal alignment with overall energy transition objectives *"my goal is always been to utilize as much renewable energy resources as we possibly could"* - but in the specific context of their consulting role, their goal was to *"educate the town and all the stakeholders about the benefits of the project"* (Outreach Consultant).

This broad overview of actor objectives demonstrates substantial overlap between these individual actors, especially when it comes to advancing renewable energy while also bringing benefit to local communities. In a complex sociotechnical system with multiple actors and interests, this multi-objective perspective is essential for successful collaboration and coordination in pursuit of collective goals, which is often achieved with the help of intermediary actors who work in between objectives and interests to facilitate these connections. The following section provides the empirical contexts within this case for the specific intermediation actions that, once identified in Part 2, reveal the actors who play this intermediary role

1.4 Project Issues as Micro-Level Contexts of Action

Throughout the interviews, participants identified a number of specific issues around the planning of The Solar Project and solar development more broadly. The details around these issues provides insight into actor roles, interactions, and specific activities within an

empirical context of action. The issues described in the emergent themes below provide the necessary context and specific actions that forms the basis of my analysis in Part 2: Section 2.1, when I identify intermediary actors based on their activities within these micro-level contexts of action, Section 2.2, where I describe their specific actions and functions, and Section 2.3, where I analyze two extended quotes about agrivoltaics and community relations.

The nine emergent themes (Table 3) based on identified project issues can be loosely grouped into three categories based on geographic scope, from project-level specifics, to local-level dynamics, to state-level transition implications.

Table 3. Emergent Themes: Project Issues as Action Contexts

Project-Specific Issues	Local-Level Issues	State-Level Issues
A. Siting Considerations B. Agrivoltaics & Land Co-Utilization C. Local Solar Laws	D. Host Community Benefits E. Developer~Town Relations F. Public Perceptions & Engagement	G. Reputation of Developer H. State's Energy Goals I. Setting Expectations for Engagement

Siting Considerations, Agrivoltaics & Co-Utilization, and **Local Solar Laws** comprise more tangible and somewhat technical issues and project-level concerns oriented around the specific siting and permitting of the solar facility.

Local-level issues around **Host Community Benefits, Developer-Town Relations,** and **Public Perception & Engagement** are based more around The Town, rather than The Solar Project itself. Also, in contrast to the details of a solar law or access road, these issues focused more on relations and dynamics between the developer and town.

Finally, beyond the scope of the local project, are concerns around the **Reputation of the Developer** and **the State's Energy Goals**. These two issues are beyond the scope of any one individual project, and are more directly implicated in the broader success of New York's energy transition. The ninth theme, **Setting Expectations for Engagement**, connects the perceived successes of The Solar Project to the larger state-level transition by setting standards and expectations for developer engagement with communities.

Each theme reflects engagement, interest, and actions from different sets of actors, and provides evidence of different types of intermediation. While it might be tempting to assume that “brokering relationships” mostly occurred in local-level issues like the developer~town relations while “configuring outcomes” was more of a project-level intermediation process, the quotes excerpted below suggest a range of these intermediation processes across the nine themes. The following nine sections briefly provide some background context, and then highlight several quotes that demonstrate individual actions and interactions around these issues.

A. Siting Considerations

Participants were asked to focus on the story of their personal involvement in the project in order to highlight actions and dynamics between actors. Therefore, the specific physical and technical issues around siting a utility-scale solar project were not prominent talking points. Nonetheless, participants acknowledged the importance of a range of physical and environmental concerns, especially related to environmental impacts, land use concerns

including loss of agricultural land, and changes to the viewshed, and the discussion of these issues provided insight into micro-level actions and dynamics.

Unsurprisingly, the most specific siting concerns came from the actors at the Local level. The Town Official recalled a number of issues they brought up with the Project Developer, such as access roads (*“we didn’t want a lot of roads between fields”*) and vegetation (*“trees and brush around it to hide everything and make it more natural looking”*), and further noted the willingness of the Project Developer and The Solar Company to address these concerns – they *“really worked towards that - they came in and said “we can do this”*. The Project Developer demonstrates this willingness to address a similar siting issue when they describe how they addressed concerns of a neighboring landowner to the project: *“we either increased some of our setbacks or negotiated what the visual buffering might look like, and things like that. Because, at the end of the day, we’re trying to be a good neighbor”*. Notable, these siting concessions are mentioned in the context of *“wanting to be a good neighbor”*, which forefronts the importance of these relational dynamics.

One unique aspect of The Solar Project was the addition of a battery storage facility, mentioned by multiple participants in the context of associated concerns about safety of battery storage and environmental concerns. The Code Officer told a story of working between multiple actors trying to configure the access roads to the battery storage facility in accordance with fire code and emergency responder needs. Ultimately, the Code Officer coordinated a creative solution between actors where, instead of the developers further modifying the access road, they instead adapted to meet the needs of the first responders by purchasing them a more advanced utility vehicle (a *“side-by-side”*).

“[The developers] couldn’t meet the requirements of the fire code, so I worked with our engineering team and legal team on [the access road]... and then went to my fire department, I said, “are you guys good with this?” – they were, but then I went to the ambulance department – and they were not. The conversation was “we can’t wheel a gurney 1000 feet across this field.” So we went back to [the developers] and said “hey we’re going to put this comment – but here’s the solution: get the ambulance department a side-by-side, and we’re good with modifying that section for you but we can’t have our guys risk themselves trying to save someone – and EDF agreed to the side by side.”

Here, the Code Officer coordinates and problem-solves between engineering, legal, developers, fire, and ambulance departments to come up with an innovative solution to meet the needs of the ambulance first responders in a specific context of action that demonstrates multiple types of intermediation processes.

B. Agrivoltaics: Co-Location of Sheep & Bees

Another prominent topic of discussion was the potential for agrivoltaics on the solar site. Agrivoltaics refers to the co-location of solar photovoltaic facilities with agricultural land uses like grazing sheep under the solar panels or planting pollinator crops for beekeeping. The potential for this dual-use of the land underneath the solar panels was an appealing prospect to individuals from state, local, and developer perspectives.

The Project Developer, who had previous experience with co-location of sheep and bees under panels in other projects, was eager to suggest Agrivoltaics in tandem with The Solar Project: *“we’re trying to do what we can to promote the idea of solar grazing and hosting bees onsite... I think the more we can break down barriers, the more we can bring interest to agrivoltaics and maybe help establish a market for their products, the more feasible solar grazing can be and the better chance they’ll have for actually beating out traditional lawn-mowing.”* The Project Developer also notes how there was already interest from local

farmers, interested in grazing sheep on the land “so we know that there's a will to do it – we just have to make sure there's the right way and the economics are suitable too.”

The Code Officer responded to this proposal with a set of pragmatic questions about the feasibility co-location – “will it actually work? Is there a market for [lamb meat], and can that land where the solar is going to be located actually support that?” – and then proceeded to coordinate the development of an Agrivoltatics Study to fully investigate the practicality of the developer’s potential for sheep and bees.

Another issue related to Agrivoltaics involving bees is the concern around potential invasive species planted as pollinators. Again, the Code Officer in their role of Solar Coordinator pushes for developer accountability regarding pollinator vegetation “show us what vegetation you're going to plant for these pollinators... we want to make sure there's no invasive species.” The Code Officer even goes so far as to work with the Department of Agriculture at the state level to “create a mechanism through site plan review to see what's actually going on and make sure it works”, which introduces the the state as an actor in this Agrivoltaics issue, in a regulatory and accountability role.

Actors at the state level were also interested in Agrivoltaics from a personal perspective. The State~Dev PM expressed a personal interest in the potential for Agrivoltaics, and said “fuzz and buzz is the tip of the iceberg” and shared their vision of a future with the symbiotic co-location of agriculture and solar facilities. However, at present, proponents for solar development are often in conflict with agricultural interests. The State~Dev PM reflected how “[we] lose so much time fighting that fight, rather than coming up with innovative

solutions”. This quote emphasizes again the importance of understanding actors and interests in these transitions contexts, and the need for intermediary actors to work to coordinate, align, mediate, and broker better relations.

Despite the associated issues and questions around Agrivoltaics, the participants who brought them up were overall supportive. The Outreach Consultant described Agrivoltaics as a “*very complementary use of land*” and a key point for educating people in the town about the benefits. And the Municipal Attorney, who reviews the terms of the siting agreements, remembered the Agrivoltaics assessment favorably: “*I remember the proposal very well, it was received well by the experts*”, but then quickly added “*we’ll see what happens because once things get on the ground.*” This combination of general support with grounded pragmatism emerges from this research as an essential combination of traits for effective intermediaries.

Multiple actors also recognize that economic limitations constrain decisions around Agrivoltaics. Just as the Project Developer referenced the need to ensure that the “*economics are suitable*”, the Code Officer acknowledges that the decision around grazing sheep over conventional landscaping comes down to an economic decision: “*it has to make sense for {the developers} to go forward with it - so i’d say at the end of the day, yeah if it’s cheaper to mow it they’re gonna mow it...*” The Town Official noted another important point about co-location in the context of The Solar Project: the land leased for the panels was not “prime farmland”, rather, “*The soil was grade D soil, just for corn... [and farmers aren’t] making money milking, so it’s a win-win*” which reflects the relative lack of conflicting interests in this particular case.

This key issue around the potential for agrivoltaics reveals multiple engaged actors, institutional interests, and relational dynamics that will be discussed in the next chapter through the lens of intermediary actors and actions.

C. Local Solar Laws & Community Preparedness

Multiple actors cited The Town's solar law as a key factor supporting the planning process for The Solar Project, and demonstrated the importance of providing resources and information to support solar law development. The Town Official says that "*the solar law was the biggest thing*" in terms of catalyzing local solar development, recalling that "*as word got around that we had a solar law on the books*" the town saw an increase in interested developers.

Local solar laws reflect the level of community preparedness for development, which is a central focus of the outreach work of the State~Local PM. Their support involves "*providing them technical assistance and resources to help prepare them for clean energy development in their communities – things like model laws and educational seminars.*"

Helping local communities prepare for solar development is also a central aspect of the position of the County Planner, who described how they act as "*a resource for communities, providing knowledge and support about developing solar laws*".

The Town was especially proactive in approaching potential solar development. The Code Officer took the initiative to seek assistance on developing a solar law "*so I went to the*

Association of Towns and had them send over local laws”, and worked to ensure alignment between other existing plans within the town, particularly the comprehensive plan and the agriculture plan. These preexisting plans from a forward-thinking town paved the way for proactive preparation for renewable energy development.

D. Host Community Benefits

Closely related to the theme of community preparedness is the importance of identifying and negotiating benefits for the host community, which takes the form of a legal “Host Community Benefits” agreement.

Providing benefits to local communities was cited by nearly all actors as an important objective of the solar project planning process, and the State’s transition goals more broadly: *the goal is to provide clean energy for NYS to help us meet our goals and at the same time provide benefits to the community that’s hosting it. (State-Local PM)*

The process of identifying host community benefits begins with an engaged understanding of the needs of the community, as described by the Code Officer:

“That’s the biggest thing is... if you know what development is trying to come, figure out if that development works for you, and figure out how that development’s going to best benefit you... listen to your community and see what your community wants and needs, if your community needs townline water, have that conversation... that’s the biggest thing I see... so sit down with the community, figure out, what are the actual needs of the community and go from there”

On the developer’s end, providing host community benefits is not altruistic, but in fact helps support the overall goal of having a project that is well-received by the community.

I can’t speak to other developers... but over time it’s been recognized that being proactive in terms of community engagement, being somewhat generous in terms of

supporting community groups and initiatives, can go a long way for developing a positive message within the community.

One specific example of benefits tailored for this town, the water study, demonstrates the importance of listening to communities, and the evolution of constructive conversations with developers. The proposed battery storage facility required a substantial amount of water storage for safety, and the conversation around this water storage initiated a conversation around the strained municipal water supply in The Town. The Code Officer explains how they worked with the developer to fund a water study, which then enabled the town to apply for further grants – *“80% of the town struggles with water every summer, so it's a huge benefit for this community... This is a spinoff of what large solar development could bring”*

This water study is just one of many examples, from tax benefits to charging stations, that result from a constructive partnership between the developer and town, and a proactive and motivated Code Officer and the town board. *“By the time we're done here, [The Town] will benefit half a million dollars every year, it's about 40% of our budget just from solar, not including all the other stuff that comes with it.”*

The Outreach Consultant, who has a broader perspective from working with multiple municipalities around the state, reflected that the town is a *“pretty savvy municipality - they understood the value of solar, and what it would bring to their town”*.

E. Developer~Town Relations

The relationship between The Town and The Solar Company was the single greatest factor mentioned by participants that contributed to the relative success of The Solar Project. Different actors characterized this relationship in different ways, but consistent throughout was the importance of having a functional relationship based on trust, reciprocity, and communication. The Town Official emphasized the importance of trust, with examples of how it was gained:

If you're going to do solar, you have to work with the solar company. Pick one you can trust, that you can work with, that will work with the community. [The Solar Company] was smart about {building trust} - they started investing into the town, into youth programs, educational stuff for the school, little things... to make their presence known, that they're here "we're going to be around" and "we're the company for [The Town]"... {investing in} fire dept, school, soccer teams... to get the word out and be part of the community

The Initial Developer, who forged the initial connection with the town and brought the Project Developer on board, reflected on the symbiotic relationship between the town and developers:

You'll see that the benefits we provide the town through tax structure... I think the town would say that we've tailored the benefits directly to their needs and wants... which is a value to them. And to us, we have a [person like the Code Officer] the town board - they roll up their sleeves whenever an issue comes up < Initial Developer

The Project Developer reflects back on the relationship-building work of this initial developer and says "I think [the Initial Developer] established some really great relationships, especially with [the Code Officer] and the town itself".

Since this relationship is referenced by many as key to the project's success, the influence of any intermediaries in shaping and maintaining this partnership directly contributes to

advancing this project in the greater transitions context. It is therefore unsurprising that the importance of a good partnership is referenced at the level of state actors as well: “We want the developers to be good partners with the town - we want them to listen, take what they’re doing seriously” (State~Dev PM).

F. Public Perception & Engagement

In addition to the strong relationship between town officials and the private solar development company, actors from both the town and the developers emphasized the importance of public perception and active engagement. Interviews revealed substantial engagement efforts from both the developer and the town to engage the public, build support, and manage perceptions – from open town halls to kitchen table conversations.

The Code Officer emphasizes how important public outreach was to the town officials, and notes the developer’s willingness to engage: “The town board was adamant people had input. They were unanimous – that needed to happen.”... We said “before you even move forward, come talk with our community first,” and they had no problem doing it... before they were even required to file the {Public Engagement Plan}.” The Code Officer also notes their personal investment in the public perceptions of the project; “When they come out with a design and any neighbors that are unhappy, I ask [PD] to go talk to those neighbors directly and have that conversation with them in person.... Really important to keep a positive vibe going on with the project”

Indeed, this interaction is corroborated by the Project Developer’s narrative, who also appears committed to public engagement, whether at kitchen table meetings (*I think it’s*

about half a dozen landowners or so that we've met with them at their kitchen table sometimes 1, 2, 3 or 4 times) or a county-wide educational open houses: [The Code Officer] asked that we host a public meeting for local towns and municipalities and the county in the area to inform them of solar development... the meeting wasn't for us to expand the project - it was more to go by [The Code Officer's] lead.

The County Planner, who attended this open house organized by the Code Officer and the Project Developer, noted the outreach efforts of The Solar Company: “*They were more transparent and more participatory [than other developers]... in the first public meeting, the first thing - they stood up and gave a description of the project... in [other towns, developers] didn't even give a description of the project, they just had people from a team sitting in a room... so people didn't understand the project fully*”. This quote from the County Planner also creates a stark contrast between The Solar Company and other developers, which likely contributes to the positive overall reputation of The Solar Company cited by multiple actors.

G. Reputation of Developer

The Solar Company's active engagement and positive relationship with The Town is reflective of the company's positive reputation, but as seen in the previous quote from the County Planner and others, many other project developers are less favorably perceived.

A solar development company's behavior at the project level with a community impacts the company's reputation, which has implications for other development projects across the

state. This links the immediate micro-dynamics at the project level to the larger system of renewable energy projects.

Multiple actors referred to the ease with which towns can call each other up to ask about different developers' reputations: *“you can research them, and find out about all these companies... if they have good records or bad records...”* (Town Official.) The Code Officer adds *“Today, If I was on the other side of the fence, first thing I'd do is call up communities that have a project, “how's your experience with this, how are you doing with this?”* These quotes show how developer reputations and relationships matter in a broader context, and how insight is shared across a network of towns that can inform local decisions and help prepare communities for engagement with developers.

H. State's Energy Transition Goals

As demonstrated by the relevance of a developer's reputation across the state, many of the micro-level dynamics at the project level scale up to impact the overall state's goals. The Siting Spokesperson from the Siting Board makes the connection between communities explicit, and situates the reputational concern in the context of the state's goals: *“We don't want people coming in and trying to push things through as fast as they can... Might be in different towns but it's all connected... if a developer steamrolls over a town it shapes the narrative for the next several years.”* As such, the State has a strong incentive to support good relations between developers and towns, because a poor developer reputation can impede future project development, and thus constrain progress towards the energy transition goals.

I. Setting Expectations for Engagement

The ninth and final theme synthesized across these participant interviews is the degree to which actors viewed The Solar Project as an especially successful model of developer engagement with a local community. Multiple actors suggested that this case can set the standards and expectations for other developers, both in terms of informal reputational effects between towns, as well as through the expectations set by engagement at the state level.

The County Planner, who oversees projects in multiple towns from multiple developers, remarked that *“we’ve been spoiled because [this company] came first – our expectation is the other two companies will be just as easy to work with, just as willing to meet local codes, just as willing to {go above and beyond}”* which demonstrates the precedent has already been set at the local county scale.

The State~Dev PM remarked that The Solar Company involved with this Solar Project *“has been leading the way here, as a prime gold-star example in terms of how to work with the town for a utility-scale facility... [they’re] willing to walk the walk and find local niche way to support the community”*

Finally, the Code Officer reflects on the relative success of The Solar Project: *what I see, and I believe [the Project Developer] sees, is if you have one project that that people can hold that as a standard, that's a benefit not only to renewable energy – it's a benefit the communities to get support that they need to get their projects to move forward.* In this quote, the Code

Officer reveals an implied shared vision with the Project Developer that elevates the importance and purpose of their work on the micro-level of one solar project to a larger purpose with implications that support projects throughout the state.

If the successful permitting and progress of The Solar Project is indeed reflective of the functionality of this local relationship, this level of active engagement and strong local partnerships, may well be essential ingredients to the success of the State's overall energy transition.

Conclusion

Within each of these micro-level contexts around project issues, there is clear evidence of actors working in between other actors and across interests to support the project planning process and advance transitions. Furthermore, the relational dynamics observed through quotes illustrate a central point about The Solar Project: the partnership between the developer and the town contributed to the success of this project. The quotes, context, and project details described in the sections above provide evidence of intermediation processes in action, which paves the way to identify, define, and then explore the role of the intermediary at the level of an individual actor. Part 2 builds upon the context established here in Part 1, and responds to the second part of my first research question to focus on the central theme of this research: individual intermediaries and the intermediary role itself.

PART 2) Intermediaries: *The People In-Between*

RQ1: **Who** are the individual intermediary actors that connect *multiple actors, issues and/or interests* to fulfill certain functions? What **functions** did they fulfill? What **specific actions** do they take to fulfill these intermediary functions?

The planning process for developing a utility-scale renewable energy project like this solar facility involves a wide variety of actors with differing personal and professional objectives, each navigating a range of issues, as evidenced in project context described throughout Part 1. This complex planning process involves multiple points of connection between different actors and issues, which reveal the presence of—and need for—intermediaries.

In this chapter, I complete my response to RQ1 by identifying individual actors in intermediary roles who connect the actors, issues, and interests (as introduced in Part 1), and detail their functions and actions in context. As established in the literature review, an individual actor-level analysis is important to understand, because the actions of intermediaries are shaped by their individual perspectives, experiences, and characteristics of the people who fill these roles. Based on the individual perspectives elicited in the interviews, I identify intermediation processes that connect interests and actors – and the individuals behind these actions. Interviews with each participant offer insight into what these intermediation processes look like at the micro-level of individual actors and actions, which enables a reconceptualization of the intermediary as an individual actor role.

In section 2.1, I highlight empirical examples of the four intermediation processes based on activities revealed in the interviews and introduced in the “Project Issues” discussed in the previous section. I then identify the individuals who are performing these activities, and

define them as intermediaries based on the positionality, process, purpose framework developed in the literature review. In section 2.2, I define four functional intermediary roles based on each of the four intermediation processes, and illustrate each role type with empirical examples of the functions and actions of actors who fulfill these roles. Section 2.2 illustrates the functional and structural aspects of the intermediary role and conceptualizes the intermediary role as a functional and relational role at the micro-level of individual actors and actions. Section 2.3 emphasizes the importance of the individual person in this role, and features extended first-person narratives that demonstrate how an individual's perspective and characteristics influence their actions as an intermediary. This narrative analysis in section 2.3 demonstrates the importance of subjectivity in shaping actions, and the agency of the individual actors, in addition to specific actions and functions, and thus serves as a bridge between the response to RQ1 and the enabling factors of RQ2.

2.1 Identifying Intermediaries

While much of the transition literature focuses on the *purpose* of intermediaries to contribute to advancing transitions, my research centers on *process*, and what intermediation processes look like in practice, at the micro-level of individual people and their actions. I use the four key intermediation processes established in the literature review, “*transferring*”, “*brokering*”, “*coordinating*” and “*configuring*”, as the basis for identifying these individuals as intermediary actors. Although participants may not use this terminology to describe their personal involvement with The Solar Project, many of the actions they describe can be linked to one or more of these four processes. These intermediation activities often comprise an unarticulated aspect of their formal position. While not discussed explicitly, these intermediation processes—and the individuals in these

roles—connect people and elements within their immediate context of action, and with a greater purpose that contributes to advancing The Solar Project and New York’s Energy Transition overall.

To identify the individual intermediaries based on their actions aligned with the intermediation processes, I first identified instances of intermediation based on the interviews and descriptions of individual roles and project themes outlined in Part 1. I identify the actor behind these intermediation actions, and define each individual as an intermediary using the *positionality, process, purpose* definitional framework. I then consider how these intermediation processes and actions align with their formal positions and job responsibilities.

The paragraphs below highlight a selection of activities that reflect the four intermediation processes of transferring, brokering, coordinating, and configuring, which are summarized in Table 4. Each of these activities has been previously introduced with more context in the discussion of project issues (Themes, in Section 1.4) or the Origin Story (Section 1.2)

“Transferring” activities identified in the literature on intermediaries in transitions are oriented around a resource being transferred or provided, such as funding, information, or technical assistance. In this project context, there are multiple examples of resources being transferred – such as the technical assistance provided to local communities by the State Energy Agency, or the insights and guidance shared by the County Planner to other local towns, as mentioned above in section 1.4c on the theme of local solar laws and community preparedness. “Brokering” is another core intermediation process that comprises activities oriented around relationships between actors. Activities include “matchmaking” new

partnerships, “mediating” between interests, and “messaging” to influence perceptions. “Matchmaking” activities are evident in the initial matchmaking of the partnership between the project development company (The Solar Company) and The Town, and “messaging” brokering activities soon follow, and are especially evident in the sections on Public Perception and Engagement with public outreach aimed at building awareness of the benefits of the project and increasing public support. “Mediating” brokering activities are also seen in this section, employed to ease tensions and mitigate opposition, and appeared in some of the negotiations around neighbor concerns regarding offsets introduced in the “Siting Considerations” project issue in Section 1.4.

“Coordinating” and “Configuring” intermediation processes are also evident in the activities mentioned in multiple themes, whether coordinating the development of the Agrivoltaics feasibility study by aligning support and enlisting consultants, or configuring the terms of a legal agreement between The Town and The Company to negotiate the specific host-community benefits. Coordinating activities are process-oriented actions, such as moving between different actor needs and interests to clarify the first responder requirements for site access and coordinating a workaround between actors so that the siting parameters could be met. In contrast, activities that align with “Configuring” actively shape some outcome or object, whether the tangible language of a legal agreement mentioned above, or the figurative “object” of configuring and setting expectations with other developers about the expected engagement with host communities. Table 4 below summarizes these illustrations of intermediation activities that align with each intermediation process.

Table 4. Instances of Intermediation Activities

<p>Table 4: Identified activities aligned with the four intermediation processes <i>*Parenthetical references indicate the context-of-action sourced from Part 1, as introduced either in a Project Issues (Section 1.4) or Origin story (Section 1.2)</i></p>	
<p>“TRANSFERRING” <i>Resource-oriented intermediation</i></p> <ul style="list-style-type: none"> ○ providing information to aid local solar law development (“Preparedness”) ○ offering technical assistance and guidance to local governments (“Preparedness”) ○ sharing insights and feedback between towns about experiences with developers (“Reputation”) 	<p>“BROKERING” <i>Relationship-oriented intermediation</i></p> <ul style="list-style-type: none"> ○ introducing and initiating new partnerships between the project developer and town (“Origin Story”) ○ outreach messaging to build awareness of project benefits and increase public support (“Public”) ○ mediating tensions by listening to concerns of neighbors (“Siting”)
<p>“COORDINATING” <i>Process-oriented intermediation</i></p> <ul style="list-style-type: none"> ○ aligning support, resources, and expertise to develop a feasibility study (“Agrivoltaics”) ○ facilitating agreement about first responder access needs with facility siting parameters (“Siting”) ○ reviewing development progress reports to ensure compliance with state contract (“Origin Story”) ○ coordinating documentation to ensure compliance and alignment with local plans (“Preparedness”) 	<p>“CONFIGURING” <i>Outcome-oriented intermediation</i></p> <ul style="list-style-type: none"> ○ developing and designing a new local solar law (“Preparedness”) ○ negotiating terms of host community benefit agreement (“Benefits”) ○ setting expectations about engagement with host communities (“Expectations”) ○ creating an accountability mechanism to regulate invasive species (“Agrivoltaics”)

These instances of intermediation reflect the ease with which multiple intermediation processes can be identified within a given project context, and furthermore demonstrate that intermediation processes are prevalent and instrumental in The Solar Project, across scales and project issues. Even those issues that appear more oriented around processes

and outcomes (such as “Siting Considerations”) have clear instances of brokering intermediation and reflect the importance of these relational dynamics with intermediation across all parts of the process.

However, these activities are abstractions of processes and, crucially, are missing the actor. *Who* is the person who coordinates documentation, or mediates tensions, or offers technical assistance? I use these activities to identify the person behind these actions, and refocus by defining individual intermediary actors. Based on the examples in Table 4 above, and other activities mentioned in the interviews that align with the four intermediation processes, I directly identify multiple intermediary actors as the individual agents behind these intermediation actions.

As established in the literature review, three essential characteristics define intermediary actors in sustainability transitions: “Positionality, Processes, and Purpose.” “Positionality” refers to the position of the intermediary between other actors or entities contextualized in a broader sociotechnical system, “processes” refers to the aggregated activities of an intermediary, and “purpose” is linked to the impact an intermediary actor has in advancing transition processes. However, one person’s direct impact on overall transitions may be many steps removed from the overall purpose, which is why, at the micro-level of individual actors and actions, intermediaries are defined with reference to their immediate “context of action”, with their specific “actions” (which align with intermediary processes) and their “functions” within this context. This micro-level context of action is itself embedded within the larger sociotechnical systems in the broader transitions context, and thus the micro-level function scales up to have a transitions-level purpose.

Based on this definitional framework I developed from the literature, an individual must have all three of these characteristics within any given context of action in which they play an intermediary role. “Processes” are identified by the general activities described and specific actions observed. “Purpose” is illustrated by the function of these actions in context, and how that links to the greater transitions context. “Positionality” refers to the position of the individual in relation to the other actors and entities with whom they interact.

Summary of Defining Characteristics:

- a) **Positionality:** the individual is **positioned** in between other actors, interests, and/or issues
- b) **Processes:** the individual’s general **activities** or specific **actions** that align with one of the intermediation processes (transferring, brokering, coordinating, configuring)
- c) **Purpose:** the **function** of these activities has a greater *purpose* beyond the micro-level context of action, which contributes to advancing transition processes.

To define an individual as an “intermediary” I first identified which participants performed the activities (in Table 4 above) that aligned with the intermediation processes, and then noted their positionality between others within that specific action context. The details of the action contexts also reveal the micro-level function of these activities, which connects to a broader “purpose” that supports the overall transition. Since the overarching “purpose” of an individual’s activities is often not clearly articulated or explicitly front of mind, this micro-level function provides the connection to the macro-level system purpose in the overall transition. The overarching purpose of some intermediation activities may be directly related to the success of The Solar Project, which in turn contributes to the success of the state’s energy transition, since the transition depends on the successful permitting, construction, and operation of renewable energy projects. For example, many

of the “coordinating” activities described in Table 4 are performed by the Code Officer, who operates generally at the local context within the town, and their coordinating activities have the function of promoting and facilitating the processes around the planning for this specific solar project. The “purpose” of much of the Code Officer’s intermediation, therefore, is closely tied to advancing The Solar Project – which is just one of many projects that together contribute to New York’s energy transition. Other individuals, in contrast, have activities and functions in micro-level contexts that contribute to a purpose beyond the scope of this specific project. Several of the “transferring” activities originate from the actions of the County Planner and State~Local Project Manager, who are both a step removed from the specific planning process for The Solar Project. These two intermediaries transfer resources between and to other towns and communities around the state facing development. The “purpose” of their intermediation is not specifically targeted to any one solar project, but rather functions more broadly to help communities prepare for solar development, which supports overall transition goals.

Table 5 below provides a selection of intermediary actors, defined based on their positionality (between whom), purpose (function in micro-level context), and alignment with one of the four intermediation processes based on their actions or activities, which are discussed in more detail in the following sections. Of note are the several individuals whose activities align with multiple types of intermediation process, again reinforcing the multi-faceted fluidity of this intermediary role. Only a selection of examples are given for any one individual.

Table 5. Individual Actors Defined as Intermediaries

Individual Actor (Intermediary)	Positionality (between whom)	Intermediation Process (bolded) (actions/activities)	Purpose (function)
Code officer	Town< >Developer	Coordinating process, configuring laws and agreements, brokering relations between local actors and developer,	To coordinate and move siting process along, to ensure project is “sited properly” and follows codes in a way that benefits town and moves project forward
Project Developer	Developer<>>Town	Brokering /messaging relations with locals, Configuring agreements, Transferring information	Collaborate with town on planning, and influence public perceptions of project to move project forward with public support and provide info to mitigate misinformation
Initial Developer	Developer <> Town	Brokering - partnership with project developer	Move project along – with a partner who is committed to long-term engagement
Outreach Consultant	Developer<>>Town	Brokering relations, transferring information about benefits	Broker relations between town and developer, identify ways to support town, educate about benefits
State~Local PM	State Agency <>>Towns/Local Govs	Transferring resources, information, technical assistance, some financial support	Support local communities with info they need to prepare for development
County Planner	Town/developer <> other local municipalities	Transferring resources, information, insights	Provide guidance and support towns in the county to inform & support local decisions about solar laws
Municipal Attorney	Town <>> Developer	Configuring terms of contracts and negotiations between town and developer	Shape agreements in accordance with towns’ interests / use expertise to negotiate and represent town

Based on the observations of the intermediary actors defined in Table 5, there are several broad points to make regarding the positionality and formal positions of these actors, as well as the alignment of their intermediation activities with their formal positions.

The positionality of the intermediary actors as described above generally indicates the institutional spheres of interest between which intermediary actors operate, such as between The Town and The Solar Company (Code Officer), between towns within the county (County Planner), or between the state and a town (State~Local PM). This reflects the individual's positionality with reference to the interests within the broader systems context. However, at the micro-level of individual actions, each works directly with other individuals across these different spheres of institutional interests. For example, the Municipal Attorney broadly is positioned between The Town and The Solar Company as they negotiate and configure legal agreements around the project, but their interview reveals more specific details about working in between engineers, lawyers from The Solar Company, and others to configure and negotiate these agreements.

Intermediation in the context of formal positions

Each of these intermediaries is personally positioned within one of these spheres of interest. Unlike a third-party mediator or facilitator who comes into a system from the outside, often presented as a neutral party, *intermediaries* are actors embedded within the system with their own sets of embedded motivations and interests. Even though the Outreach Consultant is hired by The Solar Company, and the Municipal Attorney hired by the town, their professional actions are anchored by the interests of their employers. However, the relationship between formal positional responsibilities and intermediation

activities varies substantially across participants, from explicit alignment within a formal position to the emergence of an entirely new intermediary position.

Since the intermediary role is an informal and generally unarticulated role at the individual level, none of the actors have a formal position as an “intermediary”. However, intermediation processes are clearly evident in some of the activities they describe in the context of their work. Depending on the individual, their intermediation activities align more or less closely with their formal roles and official positions. This section briefly introduces the difference between *existing*, *appointed*, and *emergent* intermediary positions, and, for those in existing formal positions, whether intermediation is *explicitly* or *implicitly* part of their official responsibilities.

Many of these individuals are in existing formal positions that include working “in-between” others, and may involve intermediation activities either *explicitly* or *implicitly* as part of their formal responsibilities. The State~Local Project Manager (State~Local PM) is in an existing position where intermediation is *explicitly* part of their formal role: as an individual actor within the organizational intermediary (State Energy Agency), they are positioned in between state and local governments, and intermediation activities, such as reaching out to local governments to provide resources and support (“*transferring*”), are *explicitly* part of their formal responsibilities. The Project Developer also occupies an existing in-between position that requires work between actors and across boundaries, but in their case, intermediation is only *implicitly* part of their formal responsibilities. The primary explicit responsibility of a project developer is to move the project forward, but intermediation activities, like brokering relationships, are implicitly important in order for

them to develop the project. In this case, although brokering relationships with the town is not explicitly part of their formal position, this particular Project Developer demonstrates how an individual can choose to acknowledge and prioritize what is otherwise an implicit dimension of their job, and how, in this case, this added emphasis on brokering intermediation contributes to the advancement of The Solar Project.

In contrast to these individuals in *existing* formal positions that involve intermediation, several other intermediary actors are either *appointed* to or *emerge into* intermediary roles. *Appointed* intermediaries are intentionally formed positions in response to a recognized need for intermediation. The Community Outreach Consultant is an *appointed* intermediary actor whose formal position is directly aligned with the need for brokering intermediation activities. They are appointed by the Project Developer for the explicit purpose of working between the developer and the town to do public outreach, so these brokering activities are explicitly part of their job responsibilities. In contrast, *emergent* intermediaries are pre-existing actors within a given context who step into intermediary roles or expand their activities to include intermediation.

The Code Officer is an example of an *emergent* intermediary. Their formal position as The Town's code officer does support their emergence into an intermediary role by providing legitimacy and access, but the code officer role itself is not inherently an intermediary role, nor are their intermediation activities explicitly part of their formal responsibilities as Code Officer. However, due to a confluence of individual and structural factors, the Code Officer in this context emerges as one of the most essential intermediary actors and plays a major role coordinating processes around the development of The Solar Project. In a testament to

the value of intermediation, the coordinating actions of the Code Officer are recognized as so valuable by the other actors in the system, that The Solar Company and State Energy Agency both provide resources to support the formalization of a “Solar Coordinator” position for the Code Officer. This emergence of the Code Officer into a formalized intermediary role illustrates a key point: these essential intermediation activities can be performed by individuals in other existing roles, who may not appear to otherwise be “intermediary positions”.

The alignment of intermediation activities with the formal positions of these actors, whether explicitly or implicitly, establishes the intermediary role as an informal role that is compatible and embedded in many existing positions – or one that can be appointed externally, or emergent from other actors within the system. These informal intermediary roles are adopted by actors embedded within the micro-level system context, which means that intermediation often occurs as an informal and implicit function of other formal positions, without even necessarily being acknowledged, much less recognized as important. Appointed intermediaries are an exception, since they are externally appointed to fulfill a recognized need for intermediation. The implicit embeddedness of intermediation in the context of other existing formal positions makes it especially important to study these micro-level dynamics of intermediation at the individual level, because otherwise, these actions, and the importance of the actors who play these informal roles, may be missed entirely.

This perspective on intermediation as part of, aligned with, or an expansion of, other formal positions clarifies that “the intermediary” is not a discrete formal position, but

rather a fluid and functional role oriented around intermediation processes and embedded in context. The positionality of intermediaries also emphasizes the relational aspects of the intermediary role, embedded in context, and defined by its orientation to – and relations with – other system elements. Based on the interviews and examples given in Table 5 above, it's evident that many of the participants involved with The Solar Project play an intermediary role at some point throughout their involvement in the project planning process, which reinforces the flexibility of this role within the micro-level context of individual actors and actions.

This section identified a number of intermediary actors, which responded to the first part of RQ1 (*Who are individuals in intermediary roles?*). In the following section, I use the intermediary role itself as a framework to illustrate the functions and actions of these individual intermediaries. The intermediary role encompasses both actions and functions of intermediation activities in context, so a role-based analysis enables a discussion of this aspect of RQ1, as well as the personal perspectives of the individuals who play these roles to further personalize the role. By focusing on the phenomenon of intermediation through the analytical lens of intermediary roles, I define, analyze, and draw conclusions about four types of intermediary roles, abstracted from the perspectives and descriptions of intermediations from multiple individual contexts.

2.2 Intermediary Roles, Actions, and Functions

Although “intermediation” is not an explicit term used by participants to describe their actions, nor “intermediary” to describe a role, this unarticulated informal intermediary role

includes important and identifiable actions and functions. Based on actions that reflect the four primary relational intermediation processes, I identify multiple individuals who play intermediary roles that fulfill a variety of intermediary functions, which contribute to a greater purpose that advances the project planning process or the broader transition goals.

Instead of viewing the individual intermediary as an explicit, fixed, formal positional role, such as “project manager” or “planner”, the intermediary role is an informal, functional and relational role that can be fluidly embedded or adopted in the context of other formal positions. The intermediary role comprises both the actions and functions of intermediation activities within the larger context of action, and provides a name and platform to describe the individual people who play these roles. A role-based analysis thus unites the discussion of actions and function in context, as well as the individuals who play these roles. My shift to focus on the intermediary role itself is therefore an attempt to link the individual people influencing micro-level dynamics with the broader systemic impact and purpose of intermediaries in transitions through this functional role perspective.

In this section, I define four different types of intermediary roles based on the four intermediation processes. These distinct role types frame my continued response to RQ1 about the functions these intermediary actors fulfill, and the specific actions they take to fulfill these functions. I illustrate each intermediary role with examples and excerpts from the narratives of individual intermediaries, and demonstrate similarities and differences between different actors who play similar roles. I also show how one individual can assume multiple intermediary roles. The fluidity and varied manifestations of these examples of

micro-level intermediation serves to underscore the conceptualization of the intermediary role itself as an inherently functional and relational role.

In Figure 4 and the subsequent paragraphs, I define and name four intermediary role types—*Conduits, Bridgers, Aligners, and Shapers*—which map onto the four intermediation processes. It is important to distinguish the “processes” and “actions” of intermediation (verbs such as “transferring” or “brokering” that indicate types of activities) from the “functions” of an intermediary role, which includes the orientation of actions (i.e. the direct objects – resources, relationships, processes, or outcomes). In the context of this research, “function” refers to the micro-level purpose of the intermediary processes within an individual’s context of action. For example, the function of a Conduit is to *transfer resources* within a micro-level context, and the broader implications of this specific transferring activities map onto a broader purpose that helps advance transitions.

Each diagram in Figure 4 represents one of these four intermediary roles, and is labeled first by the role name, followed by the overarching function of the role (*to transfer resources, broker relations, coordinate processes, or configure outcomes.*) The green shapes represent the intermediary actor, positioned in between other actors (A and B). The orientation of intermediation actions, which characterizes the function of the role, is emphasized in magenta - whether that’s the resources being transferred, the relationship being brokered, the process being coordinated, or the outcome being configured.

Figure 4. Four Intermediary Roles

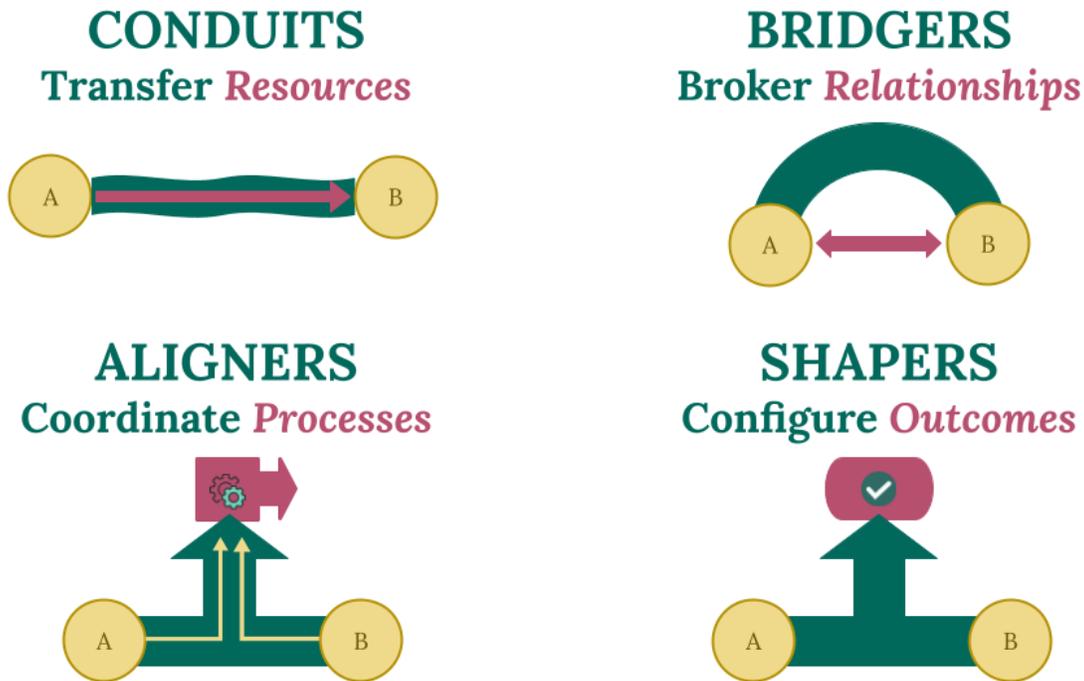


Figure 4: Green shapes represent the individual intermediary actor, positioned in between other actors or interests A and B. Each diagram is titled by the role name and function of the role. The orientation of intermediation is indicated in magenta, in both the named function and diagram (resources, relationships, processes, of or the outcomes.)

❖ A **Conduit** intermediary represents a channel of connection, and is defined by activities aligned with the “transferring” intermediation process, with the orientation of actions specifically around resources. The function of a Conduit to facilitate the transfer or provision of resources from one place to another, such as providing resources to Actor B.

❖ A **Bridger** is defined by their “brokering” activities, with the orientation of actions centered on relationships - whether initiating, supporting, or improving relations and perceptions between Actors A and B. For a Bridger, the functional role

is to act as a connecting bridge to connect different actors and enable a direct relationship between them, or shape perceptions of the other.

- ❖ An **Aligner** is defined by their “coordinating” activities, with a primary orientation focused on processes. The function of an Aligner is to coordinate and align other actors, interests, and/or resources in order to move processes forward.

- ❖ A **Shaper** is defined by activities that align with the “configuring” intermediation process, with the function to configure, design, or influence some outcome or object, be it a concrete object like negotiating the terms of a contract, or a more intangible object like configuring expectations or standards.

These roles provide a useful illustration to conceptualize the actions of individual intermediaries, as well as the various functions they have in their contexts of action, greater project context and purpose in the overall transition context. Any given role may have multiple purposes or associated impacts. For example, when acting as a “Conduit”, one intermediary transfers information in the form of technical assistance to build capacity of a local government to develop a solar law, whereas another Conduit intermediary transfers information in the form of feedback to keep their office aware of the concerns from towns. Despite these variations, each role is fundamentally defined by activities aligned with one of these four primary intermediation processes, and the function broadly described by the orientation of these actions.

In addition to reframing the intermediary role as an individual role, these four intermediary roles also allow a differentiation between the different types of intermediation processes. This is important from an actor-centric view, to understand what individuals are actually doing in practice, and also from a context-centric view, to identify needs or circumstances that require an intermediary to fulfill some function. For example, when there is a need to resolve a dispute, the context calls for a Bridger, not a Conduit. Or, if a project is highly disorganized with people working in separate silos, someone may need to step into – or be appointed to – an Aligner role to coordinate disparate efforts and guide the process into alignment.

In the four sections below, I illustrate each intermediary role in more depth with quotes and examples to demonstrate the functions and actions of the individual intermediaries in this empirical context, as well as how these individuals perceive and describe their role and actions.

CONDUITS transfer resources

“Conduits” are intermediary actors whose activities align with the “transferring” intermediation process, which is defined broadly around the transfer and provision of resources. An intermediary in the role of a Conduit works to transfer, or provide information, assistance, education, financial support, or other resources. However, the type of resource transferred and the objectives motivating the transfer will vary between Conduits. This could be providing information to inform local decision making, or to support local solar law review, as in the case of the State~Local PM or the County Planner.

For example, the State~Local PM within the State Energy Agency acts as a Conduit when they transfer information and technical assistance to local communities. They describe specific actions of calling up town officials to offer guidance on writing solar laws, with the objective of helping local governments better prepare for large-scale projects proposed in their communities. Their function in this context is to provide local governments with resources to support communities and advance overall transition goals.

The State~Local PM describes their role as to “*Make sure [towns] have all the information they need about the technologies in order to feel comfortable and safe with them. And just generally help them prepare.*” This quote illustrates their functional role as a Conduit: to transfer information to support local governments, and also reveals the overall motivating objective: to help towns prepare and feel comfortable with renewable energy technology.

The State~Local PM further elaborates on *what* this information looks like with more details of the general activities that align with “transferring” intermediary processes, such as “*providing them technical assistance and resources to help prepare them for clean energy development in their communities – things like model laws and educational seminars.*” This provides more detail to the general function of “transferring resources” – in this Conduit’s context of action, transferring actions are oriented around providing educational and informative resources like model laws or educational seminars.

The following quote from the State~Local PM also provides insight into some specific micro-level actions and behaviors that illustrate *how* they actually fulfill this Conduit intermediary role.

"If we haven't already talked to the town for other reasons, we'll sort of you know, cold call them - reach out to the town supervisor, or planning board chair, whoever we can get ahold of - and just introduce ourselves and what the team does and let them know about the project if they don't already know about it - they should already know about it but surprisingly sometimes they don't - just to offer our support, you know, see if they have a model law, and if not, if they're interested in adopting one. And answer any questions they have about the technology or the project to the extent we have that information and just generally offer support... "you got a big project coming, do you know what to do? do you need help?"

This quote shows an example of how the State~Local PM transfers resources to local towns: they cold-call to introduce themselves, offer support, and answer questions. These may appear straightforward actions, but the State~Local PM reveals an individual approach to transferring activities in the way they relate to and interact with the actor on the receiving end of their intermediation action. The State~Local PM takes the time to get on the phone and engages in direct interactions, considers the needs of the recipient of the resources, and asks whether they're interested, what they have already, and what they need. Even though the primary function of a Conduit is not oriented around relationships, these interactions are still important for delivering this information.

The focus for a Conduit is often on the output of providing resources - but where do they get the resources to transfer? What actions reflect the input of this transferring process for Conduits? The State~Local PM also describes collecting resources to share, and explains that another dimension of their work to be *"googling and scouring the Internet, and you know, trying to do the research that the towns don't have time to do themselves, so we're just doing that."* These research efforts indicate other actions a Conduit takes to acquire resources to share, and also reveal another type of "resources" to provide: the resource of time. The State~Local PM and their team do this research support work in recognition of the limited capacity of town officials. The acknowledgement of limitations on the time of

towns is another instance of an intermediary recognizing and understanding the perspectives and constraints of their receiving actors. As an explicit and formal intermediary, the State-Local PM has the allocation of time to provide this type of support.

Another example of a Conduit intermediary is the County Planner, who plays the role of a Conduit with a similar objective of supporting towns with resources in the development process, but in a different context of action: instead of operating at the state level, the County Planner functions as a Conduit at the county level, transferring information and other resources to towns in their County working to develop solar laws. Excerpts from their interview provide additional insight into the actions Conduits take on the *input* of their intermediation processes, and also illustrate the synergies and interactions with other intermediaries within a system.

“My role is to research the different laws and the different ways that language can be created, and 90% of what I get, 80% of what I get, is already out there in some fashion. I don't write up law, the attorneys write up the other 20%. I've got to give some of our attorneys credit because we've got some pretty self-educated self-created attorneys too.”

Here, the County Planner describes actions to source existing materials to provide as resources, again referring to individual research and “self-education”. This self-motivated resourcefulness alludes to an important individual characteristic that enables intermediation. This quote also demonstrates how the County Planner works alongside another type of intermediary: the attorneys, who act as Shapers to write the law. While the role of the County Planner as a Conduit is to collect and provide resources (in this case, language for solar laws), they do not directly write the law. In contrast, Attorneys, in the role of a Shaper – directly configure the law by writing and finalizing it.

Interactions with other intermediaries can also be a source of information for Conduits. The quote below shows two “Conduit” intermediaries acting in series to transfer information: the County Planner receives information from the Code Officer, which can then be transferred to other towns. In this quote, the County Planner discusses how their interactions with the Code Officer from the Town provide them with insights and resources to share with other towns in the county.

“You know, we both have cell phones, and so we talk to each other on our cell phones and so that's actually our primary way of communication. I also do speak to [the Code Officer] somewhat by email, [they're] very liberal with sharing, which is helpful to me - their communications that explains their town process, they've taken it upon themselves to help me understand the workings behind [The Solar Company] - because then I can take that knowledge, and when I reach out to the other communities, or the other communities reach out to me, I'm more educated. So I think that's a relationship I'm not sure other communities would have: I'm a resource for [the Code Officer] and [they are] a resource for me.”

This example of micro-level interactions between intermediary actors illustrates how multiple intermediaries connect to provide and disseminate insights and information – in this case, to other towns facing solar development. This quote from the County Planner also mentions an additional type of resource—experiential insights—that is transferred to them by the Code Officer. Insights from the Code Officer’s experience working with The Solar Company enhances the County Planner’s capacity as a Conduit to provide resources and support to other towns.

This interaction also shows how the Code Officer fills multiple intermediary roles, as they go beyond their “Aligner” role of coordinating in their own town to also act as a Conduit when they provide the County Planner with the resources of information and insight from their experience so that the County Planner can go on to support others. We see a reflection of the Code Officer’s proactive approach to sharing information when the County

Planner describes how the Code Officer has “taken it upon themselves” and is “very liberal with sharing”, suggesting how the Code Officer’s personal motivations support the County Planner as well.

Conduits can transfer resources with proactive, outgoing activities as well via incoming requests. The County Planner shows how Conduits can be both proactive and reactive in terms of their intermediation: “*when I reach out to the other communities, or the other communities reach out to me*”, and, similarly to the State~Local PM, perceives themselves acting as a resource. This subjective framing of their role as acting an “available resource” also indicates the relationship Conduits have with the recipients of their transferring, and their perception of their activities, as outcome-neutral: Conduits are focused on providing resources, not shaping outcomes.

While Conduits provide information that can inform decisions, they do not actually make those decisions themselves. The County Planner strongly emphasizes their intentional distance from actual outcome-based decision-making in this quote:

*“There's a strong misconception that I play a significant role in the outcome of local law development - someone just congratulated me on a law that was passed in [another town], but I don't work for the town, I work for the county. I have sat at the table in [another town], giving them information about other local laws that have been developed, and so, when they sit down and they say “tell us about setbacks, what are other communities doing, why did they choose that, what are the pros and cons, what are the issues, what do they know that we don't know, what did they learn from that? How did that inform the law?” - it's like this conversation we have about each and every piece of that of their law... but do I *choose* their law? Absolutely not.*

The County Planner is very clear that they do not choose the law, and they do not work directly for the town. Part of this intentional distance from decision-making appears to be about empowering the local communities to make their own decisions. The State~Local PM

frames their outreach in a voluntary way as well: *“I think reinforcing that our support and resources and technical assistance is somewhat neutral and just totally “take it or leave it” advice makes them a little bit more comfortable actually taking it. Trying not to be too forceful I guess.”* Similarly, the County Planner reinforces that *“It has nothing to do with my choice – it's how the Community wanted to regulate that land use in their Community.”*

These quotes illustrate how the Conduit role is oriented around providing resources and information without actively trying to shape the outcome. Although this outcome-agnostic perspective comes with a perception of quasi-neutrality, the County Planner does acknowledge that *“I check my own personal bias and acknowledge it to myself, everyone comes with a bias about a particular land use”*. However, the actions of Conduits are inherently shaped by their personal experiences and perspectives, and the ways in which they interact with other actors. Both the County Planner and State~Local PM demonstrate the care with which they both receive and transfer resources, which includes relational awareness to understand the needs of the recipient so they can best be of assistance.

In summary, the defining function of a Conduit intermediary is to transfer resources. While Conduits do not directly shape outcomes, they provide resources that enable the recipient to take further action. Like most intermediary actors, the emphasis is more on what they do, than who they are. However, the individuals in these roles personalize the nature of the Conduit role, particularly in the way in which they interact with other actors, and how they gather resources to transfer. Conduits are focused on providing resources like knowledge, experiential insights, and feedback to other actors, and in doing so, they function as the essential infrastructure for resource flow within a system.

BRIDGERS *broker relationships*

The second category of intermediation activities are those focused on brokering relations between actors. This “brokering” process comprises a variety of relationship-oriented activities and functions, like matchmaking partnerships, mediating between interests, and messaging to influence perceptions.

When an individual acts as a Bridger intermediary, they function as a bridge between different actors, interests, or entities, where the focus is the relationship between the bridged entities. The brokered relationship between actors can involve direct contact, such as “matchmaking” a partnership, where the bridged parties have direct interactions. Bridgers can also broker indirect relationships with “messaging,” where the impact is on attitudes and perceptions instead of direct interactions, and can be aimed at facilitating a stronger relationship through perceptions of the other. Bridgers focus on the relations and perceptions of people on either side of a divide, and the defining feature is actions that align with the “brokering” intermediation process.

For example, the Initial Developer acts as a matchmaking Bridger between the The Solar Company/Project Developer and the Town/Code Officer, when they bring the The Solar Company on board to develop the project. The Initial Developer’s efforts to bridge this relationship, and the intentionality behind their selection of The Solar Company, set the stage for the central relationship between the Private Developer and the Town, which is at the core of this project.

In the extended excerpt below, the Initial Developer describes some of their deliberative actions and thought process behind the initial selection of The Solar Company as a partner, and reveals their values and importance they put on the long-term perspective and relationship prioritization that they perceived in The Solar Company.

“We were putting the land deals together, and, knowing that our little company was in a position to develop these monsters, we started looking for a partner. And we probably screened, I don't know, five or six partners before [The Solar Company] came along...

They're a large company, and they have a very long term perspective on the market, and it came across almost immediately in some of the first conversations we had with them that they were committed to New York in a big way.

One of the biggest criteria that we looked at was we wanted our partner to be the owner and operator of the facility. (Many projects are developed with an interim partner, where they spend enough money to take the project to the next level, but then, then they don't have the financing to own and operate.)

So, to me, that was a very critical thing and right from the onset they were they were you know committed to the long term ownership of these things so it's pretty obvious that a company like that has has a much higher bar for making sure the community is happy, making sure that people are properly, you know, that the deals are structured properly.

The Initial Developer shows here that in selecting a partner, they are already thinking about brokering a good relationship with The Town - this demonstrates the value they placed on good partnerships and relationships from the outset of partner selection. More broadly, this quote demonstrates how the individual intentions and agency of a Bridger directly impact their brokering efforts, and the relationships that result from these actions.

Bridgers enable future action through brokering better relations, similar to how the function of the Conduit role is to provide resources, which enable the future actions of the recipient. As a matchmaker, the Initial Developer serves as an initial catalyst to broker the

connection between The Solar Company and The Town, but then describes how their role fades away, once the relationship is established.

So as soon as we knew we were going to work with them, we were arm in arm in front of the town. They were the big company, they could develop these things, and I was the local guy. We would meet together with the town, we would meet together with the county... it was almost as if I was a [company] employee. And that was fine and, in fact, as [The Solar Company] takes more and more leadership on the projects, I, on purpose, fade away.

This quote also gives clear examples of brokering in action, as well as an image of how the Initial Developer acts as a bridge between The Town and The Solar Company. The direct contact and interaction of the Bridger with the two bridged parties is an essential component of brokering. In this case, once that divide has been bridged and the relationship is established, the Initial Developer “fades away”, and the brokered connection becomes self-sustaining in the Town~Developer partnership, a clear indication of this Bridger’s success.

Another form of brokering is “mediating”, aimed at improving relations between project stakeholders, but not necessarily via direct partnerships. Like messaging, perceptions and direct relationships are important. For example, as the on-the-ground representative of The Solar Company, the Project Developer acts as a Bridger to broker better relationships between the town residents and The Solar Project in a variety of ways. The Project Developer meets face to face directly with neighbors to mediate any concerns:

“I think it's about half a dozen landowners or so that we've met with them at their kitchen table sometimes 1, 2, 3 or 4 times. We've explained the project in greater detail, and answered their questions directly... We've been very engaged with those who have wanted to be engaged over and above the public meetings that were mandated to do”

In addition to detailing this direct engagement with landowners, the Project Developer also describes their mediation brokering approach in the context of managing opposition by

trying to “drive the conversation from a win-lose to a win-win and try to find a common ground together”. In this context, the mediating function of the Project Developer’s Bridger role is to mitigate opposition, break down barriers, and broker better relations between stakeholders in the town and the project itself. As with the Initial Developer, the Project Developer has direct contact with the actors on both sides of the bridge: they meet directly with individuals for these face-to-face conversations, and, as a representative of The Solar Company, their internal organizational relations give direct contact with that side as well.

A third example of a Bridger is the Outreach Consultant, whose formal position is to broker relations between the town and the Project Developer. The Outreach Consultant is attuned to the perceptions of the developer within the town, and their brokering actions manifest through direct contact with both the Project Developer and people in The Town. For example, when the Outreach Consultant noticed the Project Developer was staying at a chain hotel, they suggested the Project Developer stay at a locally-owned Bed and Breakfast to “give local people the business”.

The Outreach Consultant also embeds themselves in the community to directly interact with different people. They describe specific relationship-building experiences such as “walking through Main Street talking to the people in the antique shop – I remember this as clear as day, there’s a group of four people hanging out and introducing myself saying hey, who should I be talking to? – and they’re saying you’re talking to us”... and also mentions their specific strategy of trying “to find those people that talk about what’s good for their town”. Like previous examples, this shows the intentionality behind these Bridgers, and their brokering efforts to build better relationships between actors.

Bridgers also intentionally navigate the emotions and feelings that are inherent to perceptions and relationships. The following quote shows how, in functioning as a Bridger to connect a group of locals to the developer, the Outreach Consultant intentionally considered the context of this bridged connection with comfort and affect in mind.

“So, we immediately set up meetings with the group to introduce the developer to them. Very personal intimate setting that they could feel comfortable answering the questions and everything they asked was very well thought out”

The Outreach Consultant’s reference to “feeling comfortable” shows their crucial awareness of this important affective subtext: how people “feel” is a major influence that shapes relationships, and thus this emotional intelligence and relational awareness is an important perspective of the individual Bridgers that shapes their brokering actions.

Relational dynamics are paramount to the success of Bridgers. As demonstrated in the actions and functions of these three individuals, to broker relations between two actors, Bridgers must first have direct contact with the actors themselves. Sometimes this can be a spontaneous connection, such as the Outreach Consultant stopping by an antique store, but in other cases it can be a preexisting relationship, such as the Project Developer mediating the concerns of landowners, or initiating an intentional new partnership like with the Initial Developer. In these examples, the individuals in these Bridger roles demonstrate the intentionality of navigating different perspectives to pursue new and improved relationships.

In all of these examples, the orientation of a Bridger’s action is on the perceptions of, and relationships between people, from different areas of interests. A Bridger functions as a

connector to broker relationships, whether those actions involve matchmaking a new partnership, mediating within existing relationships, or messaging to influence perceptions which impact relational dynamics.

Bridgers enable further action by other actors within the system through their brokering activities. Individuals in Bridger roles functionally contribute to the forward progress of transitions through initiating functional partnerships, smoothing out tensions impeding action within an existing relationship, and breaking down new barriers. Consistent throughout these brokering efforts is the astute awareness of human interactions, which is itself the basis for all micro-level dynamics between individuals. Bridgers play an essential role in complex systems by navigating and enabling these crucial relationships.

ALIGNERS coordinate processes

“Aligners” correspond to the “coordinating” intermediation process: they facilitate a process by coordinating and aligning activities, resources, and interests of other actors. Like all intermediaries, the Aligner is a relational role that works in between other actors. However, in contrast to Bridgers and Conduits, whose intermediation activities are directly relational towards other actors (providing resources to *others* or brokering a relationship *between others*), an Aligner’s intermediation efforts are directed towards a *process* or set of processes, so the relational efforts with other actors are *in service of* their primary process-oriented intermediation, which has a direct function in the micro-level context. Nonetheless, the relational aspects of the Aligner role are essential, especially when they coordinate between actors to collect and align the inputs to the process.

The Code Officer from the Town acts as an Aligner in the context of multiple project issues. One anecdote that exemplifies their coordinating activities between other actors is demonstrated in the following quote about coordinating the process of resolving an issue around the fire code and access road to the facility (introduced in section 1.4).

“[The developers] couldn’t meet the requirements of the fire code, so I worked with our engineering team and legal team on [the access road]... and then went to my fire department, I said, “are you guys good with this?” they were, but then I went to the ambulance department - and they were not. The conversation was “we can’t wheel a gurney 1000 feet across this field.” So we went back to [the developers] and said “hey we’re going to put this comment - but here’s the solution - get the ambulance department a side-by-side, and we’re good with modifying that section for you but we can’t have our guys risk themselves trying to save someone - and EDF agreed to the side by side.”

As an Aligner, the Code Officer recognizes a discrepancy, and coordinates and problem-solves between engineering, legal, developers, fire, and ambulance departments to facilitate a problem-solving process that results in an innovative solution that meets the needs of the ambulance first responders. Although the Code Officer facilitates the emergence of this solution, they do not personally shape it - rather, their elicitation of the needs and interests of the different parties coordinates the process that allows the solution to emerge. This is similar to the role of the Conduit, which also involves eliciting and assembling inputs, but refrains from exerting direct influence on the output.

An Aligner can also move between actors and coordinate efforts without the other actors even needing to interact, in contrast to the direct relational efforts of a Bridger. This shuttle diplomacy is displayed by the Code Officer in the above quote, as they go back and forth between different actors - *“I worked with our engineering team... and then went to my fire department... then I went to the ambulance... we went back to the Developers”*. While the relational elements of an Aligner might appear secondary to the emphasis on the process

itself, the Code Officer's interactions demonstrate how essential the relational dimension is to enabling the Aligner's coordination efforts.

The Code Officer also plays an important role in the context of the Agrivoltatics proposal for bees and sheep on the solar site. The Code Officer acts as an Aligner to coordinate the process of developing an Agrivoltaics study to investigate the feasibility of the developer's proposal to have grazing sheep and bees under the panels. The Code Officer aligns interests, secures funding, and enlists consultants to develop the study, among other coordination activities. As an Aligner, the Code Officer is not actively configuring the outcome of the feasibility study. However, even though they do not directly write or shape the study, they have an indirect impact through coordinating the process. In this context of action, the Code Officer's efforts as an Aligner all function to move the process forward towards the development of the feasibility study, which, in turn, will inform the eventual decision around whether The Solar Project will include grazing or beekeeping on the site.

In both of these examples, the micro-level actions of the Code Officer as an Aligner have a direct impact on the planning process for The Solar Project by coordinating the process of finding a solution for the access road and the process of developing the Agrivoltaics feasibility study. Although the Code Officer does not directly dictate the specific nature of the solution or the study, their coordinating activities are instrumental.

SHAPERS configure outcomes

Shapers, like Aligners, interface with other actors more as the "input" to their intermediation processes, as their outputs are focused on shaping outcomes that directly impact system elements. Shapers collaborate with, and incorporate inputs from other

actors in the course of their configuring intermediation activities. However, in contrast to Aligners, which are *process-oriented* roles, “Shapers” are *outcome-oriented*, with an immediate and direct impact on configuring the object of intermediation. Configuring is an outcome-oriented intermediation process. This means the focus is on shaping some specific outcome, either tangible, like elements of a product or agreement, or intangible, like expectations and future visions.

As previously mentioned in the section above on Conduits, the County Planner discussed compiling information on existing solar laws, and then referred to the attorneys who “write the final 20%”. These attorneys, like the Municipal Attorney who represents The Town, are Shapers, because they directly configure the outcome of the specific law. Unlike a Conduit, who compiles and transfers, a Shaper compiles and configures. In the context of The Solar Project, the Municipal Attorney acts as a Shaper when they configure the terms of the Host Community Benefits agreement between the Town and the Solar Company by negotiating with attorneys from The Solar Company.

Shapers often require, or incorporate, some level of expertise in order to appropriately configure outcomes. The Municipal Attorney shares their perspective of the importance of understanding and incorporating this technical element of their role:

“Attorneys in this particular area are more technicians than they are advocates, I mean they advocate for the client, but they understand the technology too, to their clients benefit, they understand what the potential challenges are.”

Even if the Shaper does not possess the requisite expertise, they are able to understand, solicit, and incorporate the inputs required to adequately configure the outcome. The Municipal Attorney describes “consulting with outside battery storage specialists” in the

context of their actions around configuring the permit requirements for battery storage, which illustrates this incorporation of expertise into the inputs of intermediation. This example of consulting “outside specialists” also illustrates how Shapers gather information through relational interactions, which is then used to configure the outcome of the permit.

Relational dynamics, therefore, are essential to the role of a Shapers – but like an Aligner, these interactions are in service of the outcome-oriented objective of a Shaper, rather than being a direct objective, as with Bridgers who explicitly focus on brokering relationships.

The Shaper can also be a secondary intermediary role, with configuring processes working alongside other types of intermediation. For example, as part of the Project Developer’s role as a Bridger to broker better relations with neighbors to the project, they are also able to act as a Shaper to renegotiate and configure certain project parameters like offsets in pursuit of “being a better neighbor.”

“Some people we've met with and have had some concessions – either increase some of our setbacks or negotiated what the visual buffering might look like, and things like that. Because, at the end of the day, we're trying to be a good neighbor. But you know we can't say yes to every demand or suggestions somebody has – because we wouldn't have a project if that were the case – but in some cases, you know it just makes sense to give a little and try to be a good neighbor to people out there.”

This example shows how the capacity to configure the project as a Shaper enables the Project Developer’s role as a Bridger – their efficacy is elevated with the agency to actually configure and adjust project parameters.

The Intermediary Role: Functional Purpose, Relational Actions, Individual Actors

Throughout each of these four sections, I’ve used the functions and specific actions of intermediaries within the context of The Solar Project to characterize and illustrate four

types of intermediary roles, which frame the specific actions and functions in response to RQ1, and also supports my overall thesis goal of conceptualization of the intermediary role as an individual actor role.

All four intermediary roles involve relational intermediation activities, and have a function in the micro-level context of action that supports a purpose in broader transition. The functionality and relationality differs between intermediary role types, and reflects the nature of these roles and how they interact within a given context. “Relationality” helps understand an intermediary’s actions, and positions in context, while the dimension of functionality refers to their function and purpose.

“**Relationality**” refers to the relational dynamics inherent to the four relational intermediation processes. This relationality manifests in the interactions and interpersonal dynamics with other actors within an intermediary’s context of action, as well as the broader network of social actors. The intermediary activities of Conduits and Bridgers are *directly relational*, which refers to the shared characteristic that relational interactions with other actors are part of the direct focus of both transferring and brokering activities. This direct relationality is reflected in the role profiles above, where both the Conduits and Bridgers have explicit awareness and intentionality about their direct relationships with actors on the receiving end of their intermediation, whether that refers to the State~Local PM’s intentional interactions with towns requiring assistance in order to transfer resources about solar laws, or the Project Developer’s intentional direct connections to understand the concerns of neighbors in order to broker better relations with project stakeholders. In contrast, Aligners and Shapers are *indirectly relational* – while relational dynamics are still

essential to these roles, the interactions with other actors are more implicit and serve to enable the primary focus of intermediation activities, which is to coordinate processes or configure outcomes. This relational distinction is visually evident in Figure 5 below, which shows Conduits and Bridgers positioned in between two actors, whereas Aligners and Shapers are positioned between actors, but the direction of their intermediation is at the non-actor system elements of Processes and Outcomes.

Figure 5. Functionality and Relationality of Intermediary Roles

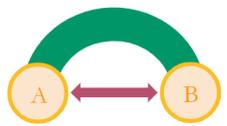
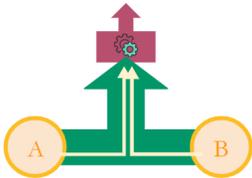
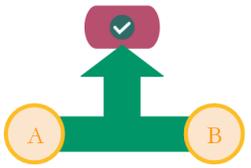
Intermediary Roles	Functionality of Role	Relationality of Activities
<p style="text-align: center;">CONDUIT <i>Transfers Resources</i></p>  <p style="text-align: center;">BRIDGER <i>Brokers Relationships</i></p> 	<p>Indirectly Functional – These roles advance transitions by enabling others to act (via provided resources or brokered relationships)</p>	<p>Directly Relational: relational dynamics with other actors are an explicit part of intermediation activities (e.g. transfer <i>to</i> or broker <i>between</i> other actors)</p>
<p style="text-align: center;">ALIGNER <i>Coordinates Processes</i></p>  <p style="text-align: center;">SHAPER <i>Configures Outcomes</i></p> 	<p>Directly Functional – These roles impacts transition goals by acting directly upon system elements, processes, or outcomes</p>	<p>Indirectly Relational: relational dynamics with other actors implicitly enable intermediation activities (e.g. they work between others <i>in order to</i> coordinate processes or configure outcomes)</p>

Figure 5 above represents the two primary essential dimensions of the intermediary role – the relational actions and functional purpose – and how those vary between intermediary role types.

Functionality, in contrast, refers to the impact of the role in the micro-level immediate context of action, and how that links to a purpose in the larger transition contexts, from the immediate sociotechnical system around The Solar Project to the broader sociotechnical systems around energy transition processes beyond the project itself.

Aligners and Shapers are *directly functional* roles, because their actions are oriented around the processes and outcomes within the system. Although the Agrivoltaics feasibility study or the Host Benefit Agreement are very small pieces, in aggregate, these small parts make up increasingly complex systems which eventually scale up to the overall sociotechnical systems of sustainability transitions. Therefore, although the process of coordinating an Agrivoltaics feasibility study or configuring the outcome of a legal agreement may seem to be small details, these Aligners and Shapers have a functionality that directly impacts project elements.

In contrast, Conduits and Brokers are *indirectly* functional with regard to system elements, because their transferring and brokering intermediation efforts *enable others* to take further actions. Conduits provide resources that enable another actor to put those resources to use. Bridgers broker relationships that enable people to work together, get along better, or think differently to support further actions. Through this intentional relational intermediation, Bridgers and Conduits enable other actors to take future actions, either by providing resources, or brokering better relations. This functional enablement of future actions by Bridgers and Conduits characterizes an indirect functional impact on non-actor system elements like processes and outcomes. Thus, this *direct relationality* of Conduit and Broker activities corresponds to an *indirect functionality* of the purpose of these roles within the micro-level context or broader system.

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The purpose of this section was to introduce the four intermediary roles, and describe their functions and actions with a variety of examples. The diagrams used to represent these intermediary roles here in Section 2.2 depict intermediaries as very structural roles. Indeed, as a functional role, intermediaries play an essential function within their given contexts, which corresponds to a purposeful contribution to the project itself and transitions overall.

However, it is equally important to remember that these figures represent individual people with their own values, experiences, and subjective perspectives that shape their actions. A central goal of my research focus on an “individual actor-level perspective” is to highlight the individual people who fill these roles, in order to better understand their unique individual contexts and subjective perspectives that shape their actions.

The following section provides an individual-actor perspective on two individuals in intermediary roles, which complements the structural perspective of this section. While this section highlighted the functions and actions of multiple individuals within one intermediary role (e.g. both the State~Local PM and County Planner as Conduits), the extended narrative excerpts in the next section shows how one individual can play multiple intermediary roles within the context of their involvement with The Solar Project.

2.3 Intermediation in Practice: *An Individual Actor's Perspective*

The intermediary role is much more than a structural position – it is deeply influenced by the attributes and agency of the individual people who fill these roles and enact the intermediation processes. A micro-level perspective of actors in transitions looks at actors as individual people, while recognizing their embeddedness in a social network and sociotechnical system.

My research on intermediary actors goes beyond a purely structural and functional perspective to consider the intermediaries through multiple relational and interactionist perspectives. This section expands the view of intermediaries beyond their functions and actions to show how the individuals in these roles – their personal subjectivities, values, and experiences, as well as their interpersonal and relational dynamics in their context of action – are just as essential to understanding the intermediary role as is the greater impact of intermediaries on transitions.

As highlighted in the literature review, all actions and behaviors emerge as a product of the subjective thoughts, experiences, and perceptions of the individual actor. Thus, understanding the intermediary role through an individual's perspective helps bring this role to life, and adds a depth of understanding to what enables their actions. This section features extended excerpts from two interviews, whose narratives each paint a portrait of intermediation in practice through the first-person perspective of two actors who demonstrate multiple dimensions of intermediation in their description of their involvement with The Solar Project. These narratives highlight multiple examples of

intermediation in practice, as well as providing context for the relational dynamics and insight into the individual people in these roles.

The narratives of these individuals illustrate the individuality and fluidity of multiple intermediary roles in action – the Code Officer and the Project Developer. These stories also demonstrate the multidimensionality of intermediation – while the previous section compiled examples of several different actors to characterize one intermediary role, here, we see one individual move fluidly between different intermediary roles as they employ multiple types of intermediation in their work.

Each of these two practice stories also provides a deeper perspective into the dynamics within two of the “Project Issues” identified in section 1.4. In the first narrative, the Code Officer acts as an intermediary to coordinate the Agrivoltaics feasibility study (Issue 1.4b) and in the second, the Project Developer works to broker relationships with town residents (Issue 1.4f). In each case, these two individuals play multiple types of intermediary roles. While this concept of one actor playing multiple roles was introduced with brief examples in the previous section, these longer narratives give more context for what these actions look like in practice, as well as more perspective on the individuals in these roles. In the narratives below, we see both individuals work across boundaries and in between actors and interests, demonstrating how intermediation actions are invested in supporting the people, processes, and project development in this small piece of New York’s larger energy transition.

A) Coordinating AgriVoltaics: The Committed Pragmatism of the Code Officer

The narrative excerpt below highlights multiple examples of intermediation processes in action as the Code Officer navigates their role within the project context to coordinate and configure a feasibility study to address one overarching question about Agrivoltaics – “*will it actually work?*”

“Every developer out there across the state will tell a town that “we’re going to have bees and sheep, we’re going to do bees and sheep.” When they kept telling us, I went to [Project Developer], and I said, “you know that sounds wonderful and great, but is it really suitable? We don’t know.”

So we made an agreement with [The Solar Company] to do an Agrivoltaics Study, and the study should be completed in the next three months. That study is looking at the feasibility of lamb meat in western NY – *is there a market for it?*, and can that land where the solar is going to be located *actually support that?*

The study is about a \$50,000 study, that’s one of the most intensive studies in the country right now on Agrivoltaics. This will be a public document in about three months. That is important, and I would tell a town, *don’t let them keep telling you that cause you don’t know if it works or not.*

One thing I did learn from this study is that 75% of our lamb meat comes from Australia or New Zealand... Which brings up the next question – *Why can't we do that here, cheaper? Why do we import all this lamb meat?*

So how do you make that work? And I’ve taken the conversation to the next level – *is there a scorecard?* There is a scorecard in Vermont for pollinators. I’ve got another small project where [the developers kept saying “bees and sheep”] and we said the same thing to them through the site plan review: *show us what you’re putting there. Show us what vegetation you’re going to plant for these pollinators, we want to make sure there’s no invasive species being introduced.* So [at this smaller solar project] they used the scorecard out of Vermont, which is very comparable to New York. A friendly pollinator site is 80, “excellent” is 85 – their score came in at 102.

So, we need to create a mechanism through site plan review to see what’s actually going on and make sure it works. And that’s what I’m pushing now with the Department of Ag.... so that we don’t keep hearing the same old story over and over.”

[What was that initial conversation like?] Their conversation was “we’re going to try to incorporate it, we want to put this in here” and that got my response to them which was “well, that sounds all great and wonderful, but *can we actually do it?* Don’t tell the people in the town that you’re going to put sheep there, and then find

out you can't do it. So let's figure out if you can do it." I just don't want something being told that it can't actually happen. Because then we're going to get a negative perspective - "well, they told us they'd go and do this - and they never did it."

Part of this study also includes that [The Solar Company] is going to have to pay somebody to have lambs there. What is that cost going to cost that developer? That's the other portion of this we had to figure out. If it's cheaper for [The Solar Company] to mow it versus paying a farmer to graze it, well they're going to mow it. A lot of people miss that concept of *they're still in business, they are still going to make a business decision.*

[Who is actually doing the study?] The Town. The town's name is on the study, [The Solar Company] is paying for it, and the town has hired consultants to actually look at the study and help us develop the study - just like we hired consultants to do the comp plan.

And once we're done, the town will now have a document that says here's our grazing and pollinating study, that communicates back to our comp plan and our ag plan. And, here's a public document - free to anybody who wants to look at it.

Intermediary Actions

This extended narrative from the Code Officer tells the story of one individual moving between multiple intermediary roles, and the individual attributes and characteristics that enable them to act. In their role as an Aligner, the Code Officer coordinates the process of developing the agrivoltaics study by aligning developer funding, town support, external information, and consultant expertise to consider the feasibility of having sheep and bees under the solar panels. The Code Officer acts in multiple intermediary roles across different contexts as they use their experience as an Aligner, coordinating these processes at the local level, to move into a Shaper role to configure a mechanism for site plan review at the state level. This extended narrative concludes with an example of transferring, when the Code Officer notes that the feasibility study will ultimately become "a public document - free to anybody who wants to look at it." As a Conduit intermediary, the Code Officer has a temporal understanding of how their work can support future action, as they intend to

make this resource available for others. The Code Officer is able to fluidly move between these different intermediary roles in different contexts of action, which shows how one individual can play multiple intermediary roles.

Behavioral Characteristics

The Code Officer's narrative also reveals multiple individual attributes and behavioral characteristics, which illustrate how their subjective perspective and personal competencies shape their actions as an intermediary. The Code Officer is highly engaged in multiple aspects of the process of considering the feasibility of sheep farming under the panels, and is inquiring and assertive with their critical thinking. They ask questions ("is there a market for it?"), foresee potential challenges ("can that land where the solar is going to be located actually support that?"), and envision possible future outcomes ("Why can't we do that here, cheaper? Why do we import all this lamb meat?"). These repeated interrogations of practicality reveal the Code Officer's deeply pragmatic approach, as they respond to the theoretical idea of agrivoltaics with the insistence that its feasibility and practicality be tested and affirmed.

What's especially notable amidst all this questioning is the Code Officer's coupled persistent commitment to actually figuring out "can we actually do this." Instead of simply expressing skepticism at the feasibility of sheep-grazing, the Code Officer takes action to figure out if it can be done. Acting as an intermediary, the Code Officer configures an agreement with the Project Developer to fund the feasibility study, and then coordinates the process of the study coming to fruition.

This combination of practical future visioning and questioning with action-oriented committed problem-solving – what I call “committed pragmatism” – is deeply embedded into the Code Officer’s actions as an intermediary, and their overall approach to coordinating and configuring in this context. This committed pragmatism also reflects personal attributes like foresight, curiosity and inquisitiveness, as well as integrative systems thinking, creativity, problem-solving, and cognitive flexibility to consider multiple possible outcomes and the interconnectedness of these issues.

Personal Perspective

What motivates the Code Officer’s commitment and diligence in this project? The Code Officer’s intermediary actions are influenced by their subjective perspective – their experiences, values, interests, and objectives – from their objectives as a Code Officer to their interests as a resident of the town to their personal values that include general support for renewable energy. Part of their diligence and committed pragmatism around solar emerges from their formal role as the Code Officer, which is “*to make sure the codes are met*” in the town. However, since the extent of the Code Officer’s actions goes well beyond their formal responsibilities, they are clearly motivated by other personal factors as well.

As a resident of the Town, the Code Officer is personally invested in the success of these solar projects in bringing positive change and benefits to the people in The Town. The Code Officer’s personal commitment to the town is evident from their response to the very first interview question: when asked to introduce themselves, they replied “*I’m a resident of [The Town] and also the code enforcement officer for [The Town]*” – associating first with their identity as resident of The Town. They also demonstrate a sense of allegiance to the town

in their remark about prioritizing public meetings from the start: “*So that was the first requirement we had right off the bat - ‘yeah come talk to us, but you got to talk to all of us.’*” This sense of “all of us” shows a sense of care for the community, alongside a commitment to transparency and inclusion to make the public aware of The Solar Project.

The Code Officer’s fundamental objectives center on their interest and vision of bringing benefits to the town, motivated from the start to develop a solar law to see “*what renewable energy could truly bring*”, and later, describing the “*amount of benefits that could come from the project*”, the Code Officer refers to the “*huge benefit for this community*”. Because of their personal stakes in the community, the Code Officer is invested in the success of The Solar Project. The Code Officer’s personal identity as a resident of the town enables them to identify these community needs, and see solar as a way to bring benefits.

The Code Officer’s care for the town extends to their fellow residents as well. The Code Officer cares deeply about public perceptions, transparency, and ensuring the process is open and available. Describing their very first conversation with the Project Developer, the Code Officer recalls “*We all love what you’re saying, it sounds really good, but we need to hold the public meetings and we need to have the people know about this*”. The Code Officer led the charge in organizing these open public meetings, further displaying their commitment to transparency, openness, and encouraging public involvement in the process. The sense of agency the Code Officer feels to advocate and coordinate the needs of their town is evident in their hypothetical advice given to other towns “*I would tell a town, ‘don’t let them keep telling you that cause you don’t know if it works or not.’*” This quote further reinforces the Code Officer’s proactive and assertive approach, as well as their committed

pragmatism. Furthermore, this indicates the type of direct interpersonal dynamics the Code Officer has with the Project Developer, and their intent to promote this similar direct and pragmatic dialogue to other towns facing development.

The Code Officer also understands the importance of interpersonal communication to “keep a positive vibe going” with the project. They encouraged the Project Developer to go speak to a concerned neighbor in person: *“I asked [the Project Developer] to go talk to those neighbors directly and have that conversation with them in person.”* This awareness of the concerns and perceptions of others, as well as the communication skills necessary to address concerns, are just two additional individual attributes that support the Code Officer in their multifaceted intermediary role.

While the Code Officer’s commitment to the town is a primary objective, another very salient personal characteristic of the Code Officer is revealed when they share that they fundamentally support renewable energy: *“Me personally, I support renewable energy.... just about everybody out there does. Let me rephrase: I support renewable energy if sited smartly and built correctly.”* This quote concisely displays the Code Officer’s simultaneous personal support for solar energy and the overall transition goals, with their commitment to protecting their local community and ensuring proper siting practices. Support for renewable energy is far from an inevitability with local residents of host towns, so the overlap of this personal value with the objectives of others, like the Project Developer, who are working towards renewable energy is an important individual factor. The combination of these two interests – supporting renewable energy and caring deeply about The Town – align to make the Code Officer an effective intermediary in a variety of action contexts.

The Code Officer also possesses an awareness of the objectives and perspectives of others. For example, while they share general support for renewable energy, they also understand other perspectives, objectives, and constraints of the Project Developer. For example, the Code Officer is well aware of the importance of the project economics and cost of grazing sheep, as they explain *“If it's cheaper for [The Solar Company] to mow it versus paying a farmer to graze it, well they're going to mow it. A lot of people miss that concept of they're still in business, they are still going to make a business decision.”* This perspective-taking is another pragmatic personal capacity of the Code Officer that makes them especially adept at the Aligner role, and enables them to coordinate disparate pieces, actors, and interests into alignment to address project issues and solve problems.

How Individual Attributes Shape Intermediation

All these individual factors – behaviors, personal perspectives, and past experience – shape the intermediary actions of the Code Officer. The Code Officer's sense of agency and efficacy is perhaps most visible in the anecdote about what pollinator crops should be planted on the solar site. This quote also demonstrates how their behavioral characteristics and personal attributes enable coordinating and configuring intermediation as an Aligner and Shaper, and reflects the Code Officer's willingness to go above and beyond their formal job responsibilities.

So how do you make that work? And I've taken the conversation to the next level - is there a scorecard? There is a scorecard in Vermont for pollinators. I've got another small project where [the developers kept saying “bees and sheep”] and we said the same thing to them through the site plan review: show us what you're putting there. Show us what vegetation you're going to plant for these pollinators, we want to make sure there's no invasive species being introduced. So, we need to create a mechanism through site plan review to see what's actually going on and make sure it works. And that's what I'm pushing now with the Department of Ag... so that we don't keep hearing the same old story over and over.”

In this quote, the Code Officer demonstrates foresight to consider the implications of which crops are planted, draws upon elements from prior experience and curiosity with the “*scorecard from Vermont*”, and pragmatically questions the suitability of the site for pollinators and works to coordinate a mechanism to do so. The Code Officer’s approach to this pollinator issue is an excellent example of how Aligners are connectors who use elements from their prior experience, enabled by personal attributes, to pull together to align elements and coordinate the process of addressing project issues.

The Code Officer’s assertive demand to the developers of their other projects to “*Show us what vegetation you're going to plant for these pollinators, we want to make sure there's no invasive species being introduced*” again demonstrates the Code Officer’s own sense of agency in this context of their ability to hold developers accountable. This example of asserting needs and negotiating decisions also demonstrates how relational intermediation processes at an interpersonal level are enabled by these personal attributes, and ultimately shape the outcome of the project as well.

Throughout this narrative the Code Officer demonstrates, on an individual-actor level, many individual attributes that enable and support intermediation: committed action, self-motivated curiosity, questioning, seeking information, a sense of agency and capacity, foresight, systems thinking, and the contextual awareness and capacity to make connections across space and time – whether pulling in insights from similar projects in another state, or providing resources and advice for others in the future.

Code Officer as an Individual Intermediary

Is it conceivable that another individual could've played this same intermediary role, to integrate concerns around invasive species into the site plan review, or coordinate the agrivoltaics study? That is certainly a possibility. However, a unique confluence of factors enables this Code Officer in this particular context, from their formal position, to their personal perspective as a local resident, to personal attributes like proactive committed pragmatism and their personal values and vision. These individual actor-level personal details have implications that scale up to shape intermediation, and thus the project itself.

Furthermore, the Code Officer's personal support for renewable energy creates a shared value with the Project Developer for promoting solar. This mutual objective sets the stage for a stronger working relationship with the Project Developer around coordinating and configuring the agrivoltaics feasibility study. The Code Officer also plays a supporting role with the Project Developer's efforts to broker better relations with the community, which further reinforces the interpersonal and relational dynamics of intermediation.

These interpersonal and relational dynamics are at the forefront of this second extended narrative, which details the Project Developer's individual perspective on building relationships with communities, and several specific actions they take in the role of a Bridger.

B) Brokering Better Relations: Project Developer as a Bridger

In the excerpts below, the Project Developer describes their efforts to broker relations between The Town as the host community and The Solar Company, as represented by The Solar Project itself. The Project Developer is the primary point person for The Solar Company on the ground in The Town, and acts as a Bridger between town officials and local residents, and the perceptions of the project and the company itself. In the Project Developer's narrative, we see multiple brokering processes – both messaging and mediating – as well as other types of intermediation, like configuring. These excerpts from the Project Developer's narrative also reveal their personal perspective from previous experience that motivates and influences their actions as an intermediary, and the individual attributes that enable them to do so.

The Project Developer starts off with a reflection on their engagement with people in the town:

“Before our first official public meeting, we wanted to make sure people knew that we were holding a public meeting. Some of the feedback we've been receiving in the past is that despite putting ads in the paper, despite sending everybody living within – I think it's like 3000 feet or so of our project – having to send them a postcard indicating the time and place of the public meeting, I think a lot of people don't end up paying attention to those and they take it as general junk mail and throw them out. So we had a land agent go knock on doors of those living closest to the project. And I talked to 60 people or so who are direct neighbors to the project.

We wanted people to know about the project. We wanted people to have an opportunity to ask questions one-on-one. And it gives us the opportunity just to take the general temperature on the project as well. There're some neighbors who we've heard from by [them] contacting us directly. Others we heard, through the town, that they have maybe had some concerns – and so we contacted them back.

There're probably, I think it's about half a dozen landowners or so that we've met with them at their kitchen table sometimes 1, 2, 3 or 4 times. We've explained the project in greater detail, and answered their questions directly. We've even put together some visual simulations of what their views might look like – before the

project, after construction, and maybe five to ten years after with the visual buffering that's proposed for the project as well.

So, we've been very engaged with those who have wanted to be engaged over and above the public meetings that were mandated to do. And yeah, maintained very close contact with the town as well. Sometimes through weekly - or more than weekly calls, whenever there are questions that come around. Because as you can imagine, this is new to us, this is new for the town too, and there's a lot of communication that's been going on back and forth with the town to make sure we're on the same page. And you know, there's issues that we've been addressing and issues that they've been addressing too. So we've been very fortunate to have a great relationship with the town.

[On direct engagement with non-landowners/other neighbors] The thing that I dislike the most is having a public meeting and finding out there's somebody who's really upset about the project, and they kind of make a scene at one of our public meetings. We'd like to find out who those people are ahead of time and see if we can address their concerns in a more private setting than in a public meeting where we're trying to provide more information to a broader group of the community. It's always nice when those meetings are cordial and have a more positive tone to them.

[Some people we've met with and have had some concessions - either increase some of our setbacks or negotiated what the visual buffering might look like, and things like that. Because, at the end of the day, we're trying to be a good neighbor. But you know we can't say yes to every demand or suggestions somebody has - because we wouldn't have a project if that were the case - but in some cases, you know it just makes sense to give a little and try to be a good neighbor to people out there.]

[On handling difficult conversations]

Instead of talking about why someone hates solar so much, pivot that conversation more towards "what kind of setbacks would they accept, more visual buffering would they like to have" - drive the conversation from a win lose to a win win and try to find a common ground together - that seems to be a lot more helpful from both sides. Because we know that there are some tremendous benefits to the community overall with those solar projects, so yeah it's just a way of kind of focusing on those benefits but also recognizing that everyone's got unique concerns and interests, and how do we resolve those.

And oftentimes, it's just education - people go to Google for any information they need, and there's a lot of, well, you can get stuck in a misinformation trap in google - so it's how do we find the right information and the right experts to help diffuse some of that misinformation and help provide the facts. You know, that's the number one thing for me - and then, once they have the facts, and they still have concerns, at least you're comparing apples to apples and not dealing with anything that isn't true.

And not to say that no one has real issues, real concerns that are not factual - I mean there's a lot of them that are - and whenever someone has a concern it's important to address it. But, I think sometimes we also recognize, we just have to walk away and just agree to disagree - but hopefully we've still made some progress there too. And it's always nice, when we can agree to disagree, that we can maintain a conversation and still maintain relationships with people - which, for the most part, we've been able to do as well."

Intermediary Actions

This narrative from the Project Developer provides multiple examples of brokering intermediation as the Project Developer plays a Bridger role to broker better relations with people in The Town. In addition to the messaging activities to broker perceptions through public meetings and direct outreach, the Project Developer also describes instances of mediating as a Bridger, such as when they meet with landowners at the kitchen table to address concerns about the project. In some cases, the Project Developer actually reconfigures aspects of the project with concessions in efforts to "be a good neighbor"

"Some people we've met with and have had some concessions - either increase some of our setbacks or negotiated what the visual buffering might look like, and things like that. Because, at the end of the day, we're trying to be a good neighbor."

In this context, the Project Developer plays multiple intermediary roles as a Bridger and Shaper to increase their ability to broker better relations with these neighbors. This integrated intermediation reinforces the dynamic nature of these intermediary roles within a single actor, and shows how different roles can reinforce each other - in this case, the Project Developer's ability to act as a Shaper to configure the project enables an additional level of relationship brokering, since they are able to offer tangible reconfigurations changes to the project as a conciliatory gesture to "be a good neighbor", instead of just using mediating and messaging to mollify discontent.

Commitment to Communication

Throughout these excerpts and anecdotes, the Project Developer repeatedly comes across as a communicative, collaborative, and cooperative individual – all characteristics that are integral to the relationship-oriented work of a Bridger. These attributes, as well as the Project Developer’s interpersonal skills and genuine commitment to showing up and making an effort to build better relations, contribute to the strong relationship between The Town and The Solar Company that is cited by many as central to the success of the project.

From the first excerpt, we see the Project Developer’s commitment to transparency and communication (“*we wanted to make sure people knew*” / “*We wanted people to know about the project*”) as they describe their messaging intermediation efforts to reach people in advance of the public meeting. This anecdote also reveals the Project Developer’s motivation to improve outreach based on prior feedback, which reinforces their commitment to brokering better relations through messaging around public perceptions of the project.

The Project Developer’s commitment to brokering relations through mediating intermediation is evident in their commitment to addressing concerns. They show openness and willingness to engage with concerns “whenever someone has a concern it’s important to address it”. The Project Developer is very proactive about addressing conflict and aware of public perceptions (“*see if we can address their concerns in a more private setting*”) and are responsive and adaptive to what they hear from the town (“Others we heard, through the town, that they have maybe had some concerns – and so we contacted

them back”) and demonstrate a committed willingness to meet repeatedly with some people. They also show strong interpersonal communication skills with an understanding of the value of showing up in person for these conversations (“we've met with them at their kitchen table sometimes 1, 2, 3 or 4 times”). All this demonstrates the Project Developer’s willingness to invest time and energy into brokering better relationships with stakeholders in the project.

Personal Perspective from Professional Experience

Why is the Project Developer so motivated to put in the extra effort to build these relationships? In the following quote, the Project Developer reveals their personal perspective from prior experience that makes a direct link between brokering better relations and the overall success of the project:

“After 11 years in this job - and at first, development was all about the tech, the technical side of a project, you know, is it sited in the best place. Are we making as much money as we could be making? Is the production the best production, is the land the most suitable land, is the interconnection point the most suitable. But over time you kinda start realizing, you know, your number one almost success factor is the public - because the people - are the people supportive of your project or not. Developing a project is all about managing your stakeholders and figuring out “how do we bring them on board” and more and more, that's, that's where we've been focusing a lot more of our efforts.”

Over the course of their professional experience, the Project Developer has interpreted and internalized the observation that relationships are essential to the overall success of a project. This subjective interpretation of their previous experience reveals their personal value for good relationships, an important factor that shapes their subjective perceptions and actions, and contributes to the Project Developer’s efficacy as a Bridger.

In addition to the Project Developer's personal subjective interpretation of their experience, we also see evidence of adaptive learning in the first line of the narrative when the Project Developer reveals they are adapting their actions around public outreach based on previous feedback ("feedback we've been receiving in the past".) This personal capacity to learn from past experience is paired with a genuine effort for public outreach. From other actors, we know this is an approach to community engagement that is not shared by all other developers in the state.

However, the Project Developer's commitments to brokering better relations are not moments of charity divorced from their primary professional objective, which is to get the project permitted and ready for construction. They describe how these relationships support the particular business model of The Solar Company as a long-term operator of the facility in addition to development. (Note that this company attribute was a core factor in the Initial Developer's selection of The Solar Company as a partner – see the "Bridger" profile in Section 2.3 for more detail on the Initial Developer's matchmaking intermediation efforts.)

"When we get involved in the development phase, we intend to be involved in the operational phase as well. So we recognize that building those relationships and community support goes a long way, because it doesn't only help us getting our permits and getting through the construction, but it's a lot nicer to be living and working in a community you feel welcome over the longer term of operation... 20, 30, 40 years - however long the project might be. So I think we always have that in mind too, that decisions we make today, and the perception we have of the Community today, and the perception that the community has of us, is going to survive beyond the three or four years that the developers are involved in the project. "

This quote also demonstrates several personal attributes – such as taking a long-term perspective, understanding the perceptions of others, and valuing relational dynamics – which the Project Developer embodies in their actions. The Project Developer discusses

these objectives in the context of the overall company goals and values, which shows their personal alignment with the company's goals.

The Project Developer's brokering actions serve this dual purpose as well, benefitting the relationships and the project objectives. As they explain, participation serves a dual purpose of giving people the opportunity to ask questions - and also brings the benefit of being able to assess the general level of support or opposition for the project.

"We wanted people to know about the project. We wanted people to have an opportunity to ask questions one-on-one. And it gives us the opportunity just to take the general temperature on the project as well."

While these excerpts make clear that the brokering efforts are not altruistic and do serve the interests of the project and the company, they also show the Project Developer's care and concern for the long-term relationship with the community.

Collaboration and Cooperation

The Project Developer's collaborative and cooperative approach is also evident in their brokering actions around maintaining a strong working partnership with the town. They are committed to seeking mutual understanding and clarity, and refer to getting "on the same page". The Project Developer's diplomatic pursuit of joint gains and benefits is seen in the quote below about working with the town.

"It takes two willing parties to make it happen, like if we propose something, but the town doesn't want to do that, then obviously we're not going to force it upon them, and at the same time, if the town wanted, you know something that we didn't want to do... I mean it could happen. I mean there's got to be some benefit in it for all parties."

This collaborative and respectful approach also reflects a personal capacity for upholding respectful and reciprocal relationships, and the ability to understand the perspectives of others. The Project Developer's personal perspective on trying to finding benefits for all parties is also evident in their mediation efforts: when faced with opposition, the Project

Developer describes trying to “*drive the conversation from a win lose to a win win and try to find a common ground together*”, another example of their pursuit for common ground and shared understanding. The willingness to understand the perspective of others, and pursue shared goals and mutual benefits are important characteristics of Bridgers, and other intermediaries.

Pragmatic Commitment to Public Relations

Another example of the Project Developer’s capacity to understand and respect the perspective of others is in their acknowledgement of the importance of “*recognizing that everyone’s got unique concerns and interests, and how do we resolve those*”. This acceptance of differing perspectives is coupled with the Project Developer’s committed brokering attempts to resolve issues and reach agreements in pursuit of better relations. However, the Project Developer also demonstrates a practical awareness about the limitations of joint gains and conciliatory actions. While they clearly make a committed effort to “*being a good neighbor*”, the Project Developer also notes that “*we can't say yes to every demand or suggestions somebody has – because we wouldn't have a project if that were the case*”. The Project Developer also pragmatically acknowledges that not everyone will be supportive of the project: “*I think sometimes we also recognize, we just have to walk away and just agree to disagree – but hopefully we’ve still made some progress there too.*” This hope for progress and acceptance of dissonance reveals how the Project Developer fundamentally values good relationships, and makes an effort to do so – but is also pragmatic about the inevitable differences that arise. Furthermore, this commitment to public engagement far exceeds the expectations inherent in the formal role of project developer, which reflects the personal competencies and values of this Project Developer. The Project Developer’s pragmatic

commitment to brokering better relations elevates the importance of the relationships, while still pursuing their primary objective of project development.

While some brokering intermediation is implicit in the inherently relational role of a project developer, this particular Project Developer goes above and beyond the expectations of their role, and consistently demonstrates a strong commitment to brokering better relations, which, based on their interpretation of their prior experience, they see as essential for project development. The Project Developer's brokering efforts, whether messaging to build public support, mediating to address individual concerns, or matchmaking to maintain the good working relationship with town officials, are all shaped by their individual attributes and subjective perspective. Their capacity for transparent and responsive communication, respectful and reciprocal collaboration, and engaged and adaptive cooperation are enabled by their willingness to see other perspectives, find shared understanding, pursue joint gains, and show up in person to build interpersonal relationships. All these individual factors enable the Project Developer to be a more successful Bridger intermediary in the context of brokering better relations with The Town. Thus, the Project Developer's brokering has multiple purposes, which serve the immediate objectives of getting the project permitted and built, as well as the long-term goals of maintaining a good working relationship with the town.

Synthesis

Relational Dynamics & Shared Values

The sections above highlight the individual actions and personal characteristics of each actor, but equally - if not more important - are the relational dynamics and interactions

between individual people. In the context of The Solar Project, the Code Officer and the Project Developer do have a direct personal relationship as part of their work to advance the project. These relational dynamics are shaped by the personal characteristics of the Code Officer and Project Developer as individual people.

Just as the Code Officer personally supports renewable energy in addition to their core objectives working to benefit their town, the Project Developer demonstrates their care for the community in addition to their objectives to advance the project itself. This overlap in shared values enables the pursuit of joint gains, which contributes to the foundation of a functional relationship. The shared value for community support and engagement is evident in the Code Officer's descriptions of the Project Developer's direct interactions and relational dynamics. The Code Officer said *"We said before you even move forward, come talk with our community first.... and they had no problem doing it"*. To read this quote with the additional understanding of the Project Developer's personal perspective and commitment to public support and relationships, it is clear why "they had no problem". This shared value for transparency, outreach, and community support contributed to the intermediation actions of both these individuals.

The perception and awareness of shared values also creates the sense of working towards joint gains in a collaborative relationship. The following quote from the Code Officer illustrates their personal perception of shared values with the Project Developer.

"I think what [the Project Developer] sees, and I shouldn't be speaking for [them] here, but what I see, and I believe [they see], is if you have one project that that people can hold that as a standard, that's a benefit not only to renewable energy – it's a benefit the communities to get support that they need to get their projects to move forward."

Perhaps the most important line in this quote is “*what I see, and I believe [they] see*” which reveals the Code Officer’s personal belief, their perception, of shared value – and their ability to identify it. So, not only do these two individuals express their personal support for both renewable energy and supporting local communities, but they are aware of being on the same page, both working together towards a shared vision of the future.

Individual Attributes Shape Action

These extended excerpts from the interviews provide a first-person narrative on intermediation through the words of two people in intermediary roles. This individual actor-level perspective enables us to better understand the personal subjectivities and individual attributes that shape intermediation.

The Project Developer’s interpretation of their previous professional experience instilled the value of building strong relationships with the public, which guides their committed brokering efforts as a Bridger intermediary. The Code Officer sees The Solar Project as a way to bring benefits to their home community, and also happens to be personally supportive of renewable energy. By acting as an Aligner intermediary to coordinate multiple aspects of the project planning process, the Code Officer is able to work towards their interests of supporting and protecting the town while also advancing the project. For both individuals, these personal subjectivities of values, interests, and prior experiences are deeply influential in their intermediation actions.

Intermediation is also enabled by individual attributes. The capacities and characteristics of both individuals are instrumental to their efficacy and capacity as intermediaries. Both the Project Developer and Code Officer show high levels of contextual awareness, with a sense

of how different pieces fit together and relate – an essential capacity for the functional and relational intermediary role. This broader contextual awareness capacity involves foresight, systems thinking, and the cognitive flexibility to understand and engage with the perspectives and objectives of others.

On a personal level, both the Project Developer and the Code Officer show a self-motivated, committed, proactive persistence that is simultaneously grounded by a pragmatic and practical problem-solving approach. They are both adaptive to feedback, and eager to find collaborative solutions, whether that's toward coordinating a feasibility study or brokering relations with concerned landowners.

In the role of an Aligner, the Code Officer shows an inquisitive curiosity and capacity for critical thinking and engaging external resources and information that enables them to creatively coordinate and configure elements of the proposal for Agrivoltaics on the solar site. Their “committed pragmatism” builds on these individual characteristics of creative problem-solving, inquisitive critical thinking, curiosity, and self-motivation. The indirect relational dimension of the Aligner role is evident in the Code Officer's strong relationship with the Project Developer, which enables them to secure funding and coordinate the study process. The functional dimension of the Aligner role is directly tied to system elements with the concrete problem-solving and planning that will impact the decisions around Agrivoltaics and The Solar Project itself.

The Project Developer demonstrates the direct relationality of the Bridger role with the primary emphasis on brokering better relations with the town through messaging to grow public support, mediate discontent, or maintain the working partnership with the town.

Their individual behavior supports this relationality, with their responsive communication, reciprocal collaboration, and willingness to directly engage in pursuit of strong relations. However, through the Project Developer's perspective we also see how these direct relational efforts have the indirect functionality of supporting a smoother project development process and aiding in identifying and mitigating opposition.

In conclusion, both the Code Officer and Project Developer demonstrate the interpersonal communication and integrative contextual collaboration that are essential for intermediation. They possess, in sum, the tandem abilities to relationally work with others and functionally see how the pieces connect into the bigger picture, with relationality and functionality as the two defining dimensions of the intermediary role.

Beyond Expectations of Position

Although both these individuals clearly play important intermediary roles in the process, neither the Code Officer nor the Project Developer are in formal positions that *explicitly* require intermediation. Unlike the Outreach Consultant, whose formal position *explicitly requires brokering relationships* between the developer and the town, or the State~Local PM, whose position *explicitly requires transferring resources* to local governments around solar development, the Project Developer and Code Officer are stepping into intermediary roles above and beyond what is required of their position.

The Project Developer's formal position *implicitly* requires some level of intermediation, because in order to fulfill their primary responsibilities of developing a project, they have relational interactions with a variety of actors. For other project developers, this relationship-building dimension of their work may be an afterthought, or not even acknowledged, much less prioritized. However, in this case, the Project Developer for The Solar Project proactively prioritizes this relational brokering intermediation as a central focus of their role.

The Code Officer's formal position, however, does not necessarily involve intermediary responsibilities. Although a code officer certainly has relational aspects to their work, there is nothing inherent in the position that implies they would by definition play a functional role that impacts the broader project. However, in this context, the Code Officer emerges in the system as one of the most important intermediary roles of the whole project, in part because of their unique combination of individual attributes, personal perspectives, interests and motivation. Unlike the Municipal Attorney or Outreach Consultant who are both *appointed* to their intermediary position, the Code Officer is an *emergent* intermediary, as someone who already existed within the given context of the town, and takes on intermediation responsibilities in addition to their existing role. Furthermore, this Code Officer provides an example of an emergent intermediary whose role becomes officially recognized for the explicit importance of their intermediation efforts, with the formalization of the "Solar Coordinator" role with secured funding from The Solar Company.

In conclusion, these narrative portraits of two individual intermediary actors illustrate the importance of understanding the intermediary role as an action-oriented role that can be filled even by individuals who might not, on paper, seem like the obvious intermediaries. Both the Code Officer and the Project Developer go above and beyond their formal and explicit job responsibilities to play several different intermediary roles in different contexts of action. Their efforts are both relational, as they interact with others, and functional as they contribute to the overall advancement of the project. Most importantly, these narratives reinforce the ways in which individual attributes and personal subjectivities influence and shape the actions of these intermediaries.

This section concludes Part 2, in which I responded to my first research question by identifying multiple individual actors in intermediary roles, and illustrated specific actions and functions both through the examples in the four role profiles, as well as these two extended in-depth individual analyses. I also conceptualized the four intermediary role types to better understand the specific functions within a given context, and compared the relational actions and functionality across these roles. This analysis serves to illustrate the individual intermediary role through the specific micro-level details within this particular context, and each intermediary role creates a profile of intermediation that can be generalized and applied in other concepts as well. In the following section, I expand upon the individual attributes identified in this part to discuss other factors that enable the actions of intermediaries, which transitions to the discussion of enabling factors in my second research question.

PART 3) Factors Enabling Intermediation

What enables an intermediary? The actions of intermediaries are influenced by the characteristics and perspectives of the individual people who play these roles. However, these individuals are also embedded in a social and institutional context. This chapter responds to my second research question, which asks “*What personal attributes and contextual factors enable and constrain the actions, objectives, and efficacy of individual actors in intermediary roles?*” The previous section discussed a number of personal attributes within the context of two intermediaries - the Code Officer and Project Developer, through direct quotes from those two individuals. In the sections that follow, I incorporate quotes from other participants as well to expand upon those two individuals’ perspectives. In doing so, I situate the Code Officer and Project Developer in their contexts of action as seen through the perspectives of others. The empirical focus remains on these two individuals, but my analysis in this chapter widens in scope to consider how institutional and contextual factors, as well as professional capacities and relational dynamics, influence and enable intermediation, in addition to personal perspectives and characteristics.

3.1 Formal Position & Professional Capacities

Although “intermediary” is not an articulated formal position, intermediation is an integral aspect of many professional roles. The formal position of intermediary actors, and their professional capacities in these positions, provide legitimacy, power, and access that enable their actions and efficacy as an intermediary.

Formal positions provide a starting position for intermediation, as individuals are often enabled by the legitimacy that comes with formal associations and expertise from professional responsibilities. For example, the Code Officer's professional responsibilities as code officer are to enforce the zoning codes in the town, which includes monitoring the legality of the siting process. These responsibilities provide a platform for involvement and access to the solar planning process, which enables the Code Officer to emerge as an intermediary. Eventually, the Code Officer's intermediation is recognized as so important to the process that their emergent intermediary role becomes formalized into the "Solar Coordinator" position to focus explicitly on coordinating solar development, separate from their other Code Officer zoning responsibilities. Thus, the Code Officer's initial formal position supports the emergence of their Aligner intermediary role as Solar Coordinator.

Similarly, the Project Developer's formal position already involves interfacing with multiple actors to move the siting process forward. This provides the starting point and premise for interactions, as well as the professional legitimacy for the Project Developer to step into a Bridger role. The Project Developer's position as a representative of The Solar Company also gives them the legitimacy to speak publicly to represent the project, as well as the power and authority to, in some cases, renegotiate aspects of the project itself in service of "*being a better neighbor*". Although intermediation may be only an implicit part of the project developer position, this Project Developer is able to build upon their professional role by making their brokering intermediation efforts an explicit priority within their existing formal position.

Neither the Code Officer nor the Project Developer are in “explicit” intermediary roles where intermediation actions are explicitly prioritized as central job responsibilities, but both individuals are enabled by their professional positions. The Code Officer’s emergent intermediary position is enabled by their Code Officer role, and their intermediation actions are further enabled by their professional capacities and expertise with local laws. The Project Developer is able to make intermediation an explicit priority of their professional role, for which intermediation is otherwise implicit in other job responsibilities. Both these professional positions provide an initial basis of legitimacy, access, and power to expand job responsibilities that enable these two individuals to play these intermediary roles.

Professional capacities also include the knowledge and expertise gained from prior experience and formal training that further enable the efficacy of intermediaries. The Code Officer’s professional expertise with legal enforcement enables their efficacy as an intermediary in their Solar Coordinator work. The Municipal Attorney noted that the Code Officer was “*aware of what the local laws are*” and how that “*Makes it easier for everyone when [the Code Officer] can quickly refer to local law*”. The Code Officer was instrumental in the development of the solar law itself early in the development process, which also shows how an individual can build upon their professional actions over time, and continue to push the process further with engaged involvement.

Formal positions also can enable or constrain intermediation based on the structure of responsibilities. Intermediation activities take time and effort, which can be a constraint on actions if intermediation is not explicitly part of the individual’s formal position and

responsibilities. The Project Developer has the capacity within their role to consciously prioritize brokering as part of their job. The Code Officer's intermediary role, however, emerges as an outgrowth from their formal position. The Municipal Attorney noted that the Code Officer was "*only a part time employee, so they had hours to give*" to the solar coordination role. The dedicated intermediation seen by the Code Officer in their expanded Solar Coordinator role is enabled, in part, by their available capacity from their existing part-time professional position.

Although all the intermediaries I discuss in this thesis are based on, or emerge from, professional positions that enable their intermediation, a professional position is not a prerequisite for an individual to step into an intermediary role. The Code Officer and Project Developer are both clearly enabled by their professional positions, but the intermediary role itself does not inherently require a professional position as a starting point. Emergent intermediaries could arise from a confluence of other factors unassociated with a previous professional position. Nor does the intermediary role require adjacency to a professional position – there are no doubt many examples of effective and essential intermediaries from and within community groups, informal sectors, or other dimensions of sociotechnical systems. As seen in the sections below, there are multiple other factors that can enable the emergence and efficacy of intermediaries in any given context.

3.2 Contextual/Institutional Factors

Intermediaries are also embedded in political, social and technological contexts that enable and constrain their intermediary actions. State legislation, local laws, institutional interests,

organizational culture, internal support, and availability of funding and resources all influence the actions, objectives, and efficacy of individuals in intermediary roles.

Legislative Context and Regulations

In this case, The Solar Project is embedded in the unique legislative context surrounding New York State's energy transition. New York State climate legislation creates the context and regulatory support for the development of large-scale solar through active solicitation of private developers to build projects, such as The Solar Project. State regulations around the contracts with developers also include legal requirements for engagement with host communities, such as mandatory requirements for community meetings, public engagement, and the development of an outreach plan. The State-Developer PM, who oversees the contracts with developers across the state, described a "*pre application form to test how much the local community is aware of the project and what their outreach plan is*" as an example of the minimum mandated engagement required of a developer before they even submit a proposal to develop a project. Legal stipulations that mandate engagement can set the requirement for some degree of brokering intermediation to occur between developers and towns.

While legislation can set a legal requirement for intermediation, expectations can urge an additional level of relationship-building with communities that goes beyond the legal minimum: "*There's the law of what you're supposed to do, and the expectation from the office.*" State-level officials and offices can create expectations and suggestions that go beyond what is legally required. All three state-level actors interviewed for this thesis emphasized the importance of the developers working with and supporting local communities, such as

the Siting Spokesperson who commented that *“We want the developers to be good partners with the town - we want them to listen, and to take what they’re doing seriously”*. The Siting Spokesperson noted that while their office cannot legally require more extensive intermediation, they can certainly suggest it: *“you’re required to have this one meeting with [the community] but nothing is stopping you from having more meetings.... We can’t tell you to do it, but are suggesting you probably should”*.

However, in this specific case of The Solar Project, the Project Developer and The Solar Company go far beyond the legal requirements for public engagement, which demonstrates a commitment to relationships and intermediation that goes beyond the legal minimum. This is recognized repeatedly by multiple participants, such as the County Planner who described the extensive community outreach efforts by the Project Developer and the Solar Company, and added *“A lot of what they did was not a requirement, we were thrilled with their eagerness to meet the needs of the community.”* This positive perception of the Project Developer consistently exceeding the requirements to go above and beyond with community engagement reflects a common sentiment across participants. While these regulations around engagement were not instrumental in driving the Project Developer’s brokering intermediation actions in this case, stronger mandatory requirements or expectations could be used in other cases to guide developers towards more engagement with communities.

Local level regulations enable intermediation activities as well, both for the Project Developer’s brokering, as well as for the Code Officer's coordinating efforts. A strong solar law at the local level prior to development ensures the community is more prepared to

work with the developer, and also builds in key protections for the community. The Outreach Coordinator explains that

“The key to any of these projects is having a nice strong solar local law... There’s a lot of strong protections in the solar law, so you have to have that in place so it’s not like “whoa, whoa, we’re not ready for you”... So they had this solar law that they were working on, while I was there, making sure that it’s a friendly solar law, yet it protects the needs of the Community.”

Not only does this legislative groundwork prepare the community for engagement with the developer, but it also clarifies the town’s objectives on a local level and builds in protections for the local community. Local regulations like this solar law influence and enable the intermediation efforts of the Code Officer and Municipal Attorney, who work to coordinate and configure elements of The Solar Project in accordance with these local rules.

Local legislation also sets the context and parameters for intermediation and engagement. When the Code Officer considers the developer’s proposal for agrivoltaics on the solar site, they recall that *“we took a step back, we need to look at our ag plan, comprehensive plan, make sure what they’re proposing at this point, make sure that’s consistent with those plans.”* Having these local regulations with the agriculture plan and comprehensive plan in advance enables the Code Officer to more rigorously interrogate the agrivoltaics proposal, and coordinate the plans for consistency and coherence. The Code Officer’s “committed pragmatism” of questioning and investigating the feasibility of agrivoltaics is enabled by these tangible regulations and plans to guide questioning and support solutions. Thus, the legislative and regulatory contexts at both the state level and local level set the stage for the actions of intermediaries.

Organizational Factors

Organizational interests, culture, and structure also influence the objectives and efficacy of intermediaries. Without stringent regulations mandating high levels of community engagement, the relationship between developers and towns is left to the priorities and cultures within the developer organization. The State-Developer PM, who interfaces with many different development companies, comments that one of the biggest influences comes from the *“developer's organizational culture, whether they prioritize those relationships... it's the cultural directive within that team.”* Across multiple interviews, participants reference the company culture of The Solar Company as especially committed to engagement with local communities, which shape the Project Developer's professional objectives and enable their brokering actions.

The Initial Developer, whose matchmaking intermediation as a Bridger first partnered with The Solar Company and introduced the Project Developer to the Code Officer, commented on the unique culture within The Solar Company that sets them apart from other companies: *The corporate culture at [The Solar Company] is pretty unusual – they want to do it right, they're not as aggressive... they're not going to take shortcuts where other companies do”* . The Municipal Attorney has a similar perception of the company culture, from their vantage point working across the table from The Solar Company: *“I think The Solar Company has come in as a very professional organization I think they have a company culture of ‘we'd rather not try to circumvent your rules, we'd like to be educated as to what they are, even though we can read them, we'll talk to you face to face and see what your expectations are.’”* These two individuals from very different perspectives still have similar perceptions of The Solar Company's apparent willingness to engage with the public, which

suggests an organizational culture that supports and enables the brokering intermediation of the Project Developer.

Capacity to support engagement goes beyond just having the company culture – a developer can value community engagement, but may not have the resources to do so. The Initial Developer provides some insights into the reality and constraints of company outreach efforts: “*Smaller companies don’t have resources to do what The Solar Company is doing... a lot of it is resource based... if you don’t have the funding, or you’re extending yourself to too many states, you’re gonna cut your public outreach.*” The Initial Developer expands on this point and suggests that it’s the availability of resources for outreach that drives company culture. They also note that if a company “self-finances”, there may be less shareholder pressure on the company to cut costs and reduce outreach efforts, which would constrain support for intermediation efforts. Although the Initial Developer was speaking more broadly about financial constraints and pressures on companies without details about The Solar Company specifically, this comment introduces an additional level of contextual factors—pressure from shareholder investors—that can either push a company to cut outreach efforts to cut costs, or, in the case of activist investors, could conceivably increase the pressure for more collaborative outreach and support for intermediation. This shows that contextual factors influencing intermediation can come from outside influences on company values and priorities, as well as from internal company culture.

The structure of The Solar Company’s business agreement as the owner-operator of the facility is another contextual factor that influences and supports the brokering efforts of

the Project Developer. The agreement structure for The Solar Project influences the expectations set for the time and longevity of relationship with the local community, which then sets the tenor for interactions and shapes the objective of invested interests. The Project Developer describes the impact of this long-term commitment on community relations:

“When we get involved in the development phase, we intend to be involved in the operational phase as well. So we recognize that building those relationships and community support goes a long way, because it doesn’t only help us getting our permits and getting through the construction, but it’s a lot nicer to be living and working in a community you feel welcome over the longer term of operation... 20, 30, 40 years - however long the project might be. So I think we always have that in mind too, that decisions we make today, and the perception we have of the Community today, and the perception that the community has of us, is going to survive beyond the three or four years that the developers are involved in the project. “

This quote demonstrates how The Solar Company’s commitment to community may emerge from company culture, but it’s also explicitly linked to the strategic foresight that accompanies these long-term contractual agreements. These business agreements, or other long-term contracts that involve relationships that persist over time, can be an important structural factor that support intermediation activities. This quote also shows how the foresight and longitudinal perspective shared by the Project Developer in their personal narrative is directly tied to the interests of the company itself: the brokering work by the Project Developer in this phase is not just for their own benefit, they are acting in the company’s best interests to invest in a strong relationship with the community.

Although the Project Developer is enabled by The Solar Company’s structure and culture that prioritizes gaining the support of local communities, their intermediation activities are also constrained by the economics of the project and financial bottom line of The Solar Company. The Project Developer acknowledges the limits to their brokering efforts by

noting that *“the project has to make economic sense to go forward... at the same time we do have to build support and show that we’re there to benefit the community overall.”* This business dimension is understood at the local level as well: the Town Official recognizes that *“In real life, you realize they have to make money too, to succeed... so it’s all that coming together so it’s viable and financially stable... you don’t want the company to go broke after 2 weeks”*. However, the Project Developer noted that they were not in a decision-making role around project financing, so without additional insight into The Solar Company’s financial strategies, it’s difficult to assess the impact of financial decision and profit motives on enabling intermediation. Overall, it’s clear that in this example of the Project Developer as a Bridger intermediary, brokering actions and objectives are enabled by the organizational priorities of The Solar Company.

Direct Support, Funding, and Resources

Intermediaries are also enabled by direct support from supervisors, or elsewhere within their organization. The Code Officer is not working in isolation – they describe support both from their immediate supervisor, and from the town board. They recall that, upon the first consideration of potential solar development, *“I went to my supervisor and he said ‘hey run with it, see where it goes and see what you can put together’”*. Because of this support from the Code Officer’s supervisor to expand their role, the Code Officer is able to allocate the time and effort to learn about solar and develop the solar law. They also describe similar support from the town board: *“I do have support from the town board though - I have to give them credit, they’re the ones who say “go for it - run with this and bring us back the information” - so you do gotta have a supportive board for that.”* This supportive relationship between the Code Officer and the Town Board is noted from an external perspective by the

Initial Developer who notes that the Code Officer “*carried the charge*“ for coordinating the project, “*and one of the questions is ‘how’ and ‘why’ – [and it’s] because their town board supports them*”. Thus, although the Code Officer is an emergent intermediary whose role expanded, and then was formalized, as “solar coordinator”, the support of the town board provides additional legitimacy, guidance, and directives that shape the objectives and coordinating intermediation actions of the Code Officer.

Funding sources and the provision of other resources are other essential enabling factors, in addition to organizational support and guidance. Since intermediation is not explicitly part of the Code Officer’s formal position, taking on additional responsibilities demands more time and effort. In this case, funding secured from the state and developer enables the Code Officer to expand their role into a full Solar Coordinator intermediary position. The Code Officer notes that developers easily recognize the need for a solar coordinator, “*but who pays for that need is another story altogether. We made an agreement with [The Solar Company] to support their solar coordinator position so it’s financially supported in an escrow agreement to this solar developer.*” In addition to providing another example of a collaborative agreement between The Town and The Solar Company, this quote also demonstrates the key point that, even if the need is recognized, funding is an essential factor to enable an individual’s capacity to act as an intermediary.

The County Planner notes the importance of funding and resources for solar coordination at the county level as well: “*Something we were worried about was making sure [the towns] had enough of a resource – we’re running pretty thin [so we started] negotiating with the State Energy Agency for funding from them to help with solar coordination*” The County

Planner's mention of the State Energy Agency suggests the importance of this state organization as an external resource for funding and assistance, and reflects the unique regulatory and institutional context for this project and transitions context.

Direct support for intermediaries can also be non-monetary assistance. The Code Officer notes how their coordinating efforts would be better supported with more logistical assistance for their other duties: *"What would make my life easier is more help on my everyday duties... fund some offices, some funding for an assistant for two years... software to make it easier to maintain and keep records."* Even in small towns that have little financial resources, the Code Officer notes that some of these things like software or assistance to relieve other pressures on time and responsibilities can do a lot to open up capacity and support coordinating efforts.

Information and training is a third category of direct support for intermediary actors. Multiple participants discuss the importance of "self-education" and demonstrate strong motivation to seek out information. However, this information must exist for it to be accessed and put to use in the first place. The Code Office notes that when The Town first considered solar, *"we didn't have any language for renewable energy (at that point) so I went to the Association of Towns and had them send over local laws."* This is just one example of an information source and third party resource that enabled the Code Officer in their intermediation work. Looking out over the landscape of solar development, the Code Officer notes the importance of providing training to support others that will find themselves in similar coordinating roles *"Code enforcement and planning boards need to be trained as to what their role is and what they're looking at – it's a new development for*

everyone across the board.” When the Code Officer acts as a Conduit intermediary to transfer information and insights to other actors like the County Planner, they are contributing to this system of providing information and knowledge to support and enable other intermediation, which demonstrates how the transferring of resources is both executed by intermediaries (Conduits), and also serves to enable intermediaries as recipients of this information.

This section highlights a broad range of external factors that all enable and constrain intermediaries, from direct funding and resources that enable intermediation actions, to company culture and organizational priorities that shape the objectives of an individual’s intermediation efforts. Both private companies and public officials are constrained by time and money, so supporting intermediation with funding and prioritization of responsibilities increases the capacity of intermediaries to act. Legislation and regulation on both the state and local level can support intermediation efforts in different ways, from mandating engagement that inherently involves intermediation efforts to providing a legal basis to guide solar coordination efforts. All these factors suggest that the capacity of intermediaries would be constrained without this structural support.

3.3 Personal Competencies & Characteristics

The individual intermediaries profiled and described throughout this thesis demonstrate that, even within the structural, contextual, and professional factors described above, the personal competencies, characteristics, and perspectives of the people in these roles are influential in shaping what intermediation looks like in practice. The extended narratives in Section 2.3 demonstrated the importance of personal subjectivities and individual

attributes through the first-person words of two intermediaries, the Code Officer and the Project Developer. In this section, I supplement those first-person quotes with comments from other participants to reflect how these individual attributes are also perceived by others in context, and how these personal perspectives are situated within organizational objectives.

Subjective Perspectives: Experience, Identity, Values

The actions of intermediaries are shaped by the subjective perspectives of individual actors, which includes their personal experience, identity, and values. The Project Developer cites their prior experience for learning the importance of engagement with community, which supports their relationship brokering intermediation efforts. *“And we recognize – or at least I recognize, with the experience that I’ve had – that finding ways to build support, finding ways to build win-win solutions out there, is a lot better than having an opposition group and all of a sudden now we’re spending a lot more money in legal fees and permitting costs and things like that.”* This insight from prior experience shapes the Project Developer’s personal perspective on community engagement, and demonstrates the direct benefits of investing in this relationship brokering, both on an individual level, and for the benefit of the project and The Solar Company itself. The Solar Company, as discussed in the section above, is perceived by other actors to also actively prioritize community engagement. The Initial Developer commented how the Project Developer *“is totally committed to the reputation of the company, with open and transparent communication to the people and stakeholders in these projects.”* Regardless of whether this outlook on engagement comes from the company culture, the perception of the Project Developer as individually “committed” to the company’s reputation and values demonstrates an important alignment between an

individual and their organizational objectives. This alignment between individual and structural factors further supports intermediation efforts.

The Code Officer's identity and values as a resident of The Town are also important personal factors that enable their intermediation. The Project Developer notes that the Code Officer *"has a really great perspective of everything and they're really close to everything going on, so they know their Community really well."* The Code Officer plays a major role in coordinating and configuring The Solar Project, with a particular focus on bringing benefits to The Town. As a resident of the town, they know the community well, which enables more effective intermediation. The Code Officer's care for The Town was also identified by the State~Local PM, who, reflecting on the dedication of the Code Officer in this role remarked that *"I think [the Code Officer] just loves [their] town and sees the benefit the project can bring to town at large."* Not only does the Code Officer's resident status provide an inside perspective that enables intermediation, but their personal connection to the town shapes their interests and values which further motivate their efforts to ensure The Solar Project is sited properly and brings benefit to the town. This quote also reflects a personal attribute that is common across many of the intermediaries: the Code Officer really just seems to care a lot, and that is recognized by others.

Individual Attributes: Competencies and Characteristics

Intermediation actions are also shaped by individual attributes – the competencies and characteristics of the people in these roles. Many of the individual attributes discussed in Section 2.3 about the Code Officer and Project Developer are recognized by other actors.

The triangulation of corroborating additional perspectives suggest that these individual factors do in fact enable intermediation.

Personal commitment is an important characteristic that supports success in any role, and intermediation is no different. The Initial Developer comments on the Project Developer's commitment to transparency and brokering relations with public engagement: "*[The Project Developer] sees transparency as very critical to [their] role - regardless of pushback, disgruntled public... they keep pushing forward - and it works. We've been in public meetings where we've been shouted out, and just hung in there... most developers would've turned and ran - but the Project Developer went above and beyond call of duty with outreach*" While this quote may also suggest that the expectations for engagement from "most developers" is far too low, the Initial Developer is clearly impressed with the dedication and commitment of the Project Developer to these brokering efforts.

This motivation to go above and beyond the "call of duty" of formal job responsibilities is another important individual attribute demonstrated by multiple intermediaries, and observed by others. The State~Local PM reflects several important individual attributes in the following quote about the Code Officer:

"[The Code Officer] will pick up the phone and not be afraid to call anyone anytime they have questions. Just talking to everybody and I think they're probably learning a lot by just volunteering to take on work and learn and make those phone calls... and there's no way they're getting paid enough, I don't know what they get paid, but there's no way they're getting paid for all of the hours that they put in just going above and beyond, and trying to learn everything you can to do the right thing."

Included in this quote are the characteristic inquisitive curiosity and motivation for self-education seen in several actors, especially the Code Officer. The State~Local PM also suggests an underlying fundamental motivation of trying to "do the right thing", which

aligns with the committed pragmatism of the Code Officer, and with the normative directionality of sustainability transitions more broadly.

Committed pragmatism refers to the Code Officer's practical and highly contextual approach of grounding an idea in the specifics of a potential course of action, coupled with the commitment to actually follow through with that line of inquiry. This constant questioning and commitment to finding answers is one of the Code Officer's key competencies, and directly enables their intermediation efforts as an Aligner to coordinate the agrivoltaics feasibility study: *"is it really suitable? We don't know... so we made an agreement with The Solar Company to do an agrivoltaics study."* Committed pragmatism also builds upon individual curiosity, as well as other additional individual capacities including foresight and contextual awareness, which are both important capacities for individual intermediaries, who are embedded in the context of a forward-looking sustainability transition.

This foresight and contextual awareness are especially important capacities for Aligners and Shapers, who act directly upon system elements often in problem solving roles. Many decisions in transitions are path dependent, so an intermediary who can think ahead, plan, and consider different possible futures and outcomes can help mitigate unintended consequences and poor outcomes later on. This is a beneficial capacity for maximizing benefits to the community as well. The Code Officer's foresight and capacity for planning ahead is seen in this quote where they advise other hypothetical towns about optimizing solar development for local benefits: *"if you know what development is trying to come, figure out if that development works for you, and figure out how that development is going to best*

benefit you.” The Code Officer’s capacity to look ahead to envision and connect to potential future needs shows a level of opportunistic preparedness that benefits their coordinating intermediation activities.

Another important attribute of an intermediary actor in transition contexts is personal reflexivity and adaptability to feedback. The Outreach Consultant comments on the Project Developer’s adaptability and active solicitation of feedback in the following quote:

“I’ve worked with so many developers, and I have to say... They just need to understand how to work with the public. Engineers are not public speakers per se, you know, but there’s some really good engineers out there – that just need the coaching on how to do it... I was always with [The Project Developer]... everywhere we went, [they’d] always be like “how did I do” and I’d be like “that was good, except you went off again here”. Not every developer will handle criticism, as well as others. But they have to sell their project to the public.”

This quote reflects many relevant components that enable good brokering intermediation, and the Outreach Consultant’s comments suggest that some of these skills can be taught with coaching. The Project Developer’s active solicitation of feedback as described by the Outreach Consultant indicates not just reflexivity and adaptability, but also a sense of humility and “willingness to receive criticism”. These attributes are beneficial for an intermediary actor, where contextual awareness is essential for both adapting to external feedback and system goals, as well as understanding how to adapt one’s own personal role within the micro-level context.

Reflexivity about one’s own role also includes an understanding of how one is perceived by others. The Code Officer demonstrates this reflexive contextual awareness when they contrast their efficacy as a Conduit to transfer insights to other towns about solar development with someone from the State Energy Agency.

“If you were to send [The State Energy Agency] to any town in the state, they don't have the same credibility that I would have – because everyone thinks that – “okay our governor's put out an initiative, and [The State Energy Agency] role is to make that initiative happen.” But if I was to walk in there, they're gonna listen to me, and know this is how we did it. There's just more credibility there.”

The Code Officer is aware that their identity as a local official with local experience provides them the personal credibility to engage with these communities. When the Code Officer describes the credibility afforded to them by their on-the-ground experience managing solar, it demonstrates their awareness of how the perceptions of other actors on the receiving end of their transferring actions affect their efficacy as a Conduit. A Conduit cannot transfer resources if those receiving the information are not willing to listen, so the reflexive capacity to consider one's own positionality within a context through perceptions of others is an important personal attribute that enables intermediation.

In aggregate, all these attributes and characteristics support the capacity and efficacy of individual intermediaries across several key dimensions: individually, systemically, and interpersonally. Reflexivity and adaptability support an individual's awareness of their role situated within a given context. Foresight, systems thinking, and spatial awareness enable an individual to see how different pieces fit together, and connect micro-level actions to the broader transition goals. Finally, cognitive flexibility, perspective-taking, empathy, and humility enable an individual to recognize and understand the different perspectives and objectives of other actors in the system and navigate in between other actors and interests, which supports the interpersonal relational dynamics that are inherent to the intermediary role.

3.4 Relational & Interpersonal Dynamics

Relational dynamics emerge from interactions between actors. Since the intermediary role is, by definition, a relational role that involves interactions with others, these relational dynamics can both enable and constrain the actions of intermediaries. These are essential dimensions to consider within a given project context because it is often the relationships between actors, more than technical elements of the project, that move a project forward or halt its progress. In this case, the strong working partnership between The Solar Company and The Town was cited as central to the successful permitting process by multiple actors. A closer look at the details of this dynamic partnership reveal several key relational factors that contribute to positive relational dynamics, including good communication, trust, reciprocity, and a sense of agency in the relationship. These dynamics are both the result of intermediation efforts, and also serve to enable other intermediation actions.

Communication

Effective communication is the foundation of strong relationships. Accessibility and quality of communication support constructive interactions, and several participants comment on both these factors. The Town Official demonstrates the strength of the Town~Developer relationship when they state that “*I could call [The Project Developer], right from here, and they’d pick up their phone*”. This quote also reveals the committed responsiveness of the Project Developer, and the perceived ease of communication. As for quality, the Code Officer mentions that “*When the Project Developer first came to me, it was a really nice conversation,*” which suggests that an initial positive interpersonal dynamic can get a

relationship off to a good start. The State~Local PM emphasizes the importance of a strong start to a relationship when they comment that "Early and in-depth engagement goes a long way". This observation is supported by the strength of the relationship in the case of This Solar Project, which thanks in large part to the brokering work of individual intermediaries. From the developer's perspective, the Initial Developer comments that "*The Code Officer and Town Official did an amazing job of directing the Project Developer*", which again suggests strong communication in the context of a functional relationship.

Trust

Transparency, in addition to reliable communication, is an essential precursor for trust in a relationship. One recurring theme heard through these interviews is the importance of trust between a developer and the town, and within the community. Both the Town Official and the County Planner remark on their perceptions of transparency and honesty within The Solar Company. The County Planner notes that "*they've been more transparent than any of the other companies*". Though this comment is notably in relative, not absolute terms, the perceived transparency in comparison to others further supports the perception of The Solar Company's commitment to engagement. The Town Official says "*They were honest, they came and brought experts and engineers... and never hid anything from us. They say same thing {each time}*" which emphasizes the importance of consistency as well as transparency.

However, mistrust of developers is commonplace, and can constrain brokering efforts, as acknowledged by the Project Developer: "*In a lot of cases developers are not trustworthy sources of information in the community... but if we can help trusted local leaders earn their*

trust and have them say the same messaging that we provide that can go a lot further". In order to work with trusted partners in these relationships, intermediaries like the Project Developer must have the personal capacity to understand and identify trusted actors and key relationships within a community, and possess the interpersonal skills to support relational dynamics that build strong trusting relationships.

Reciprocity

Communication and trust support reciprocity, which is another essential ingredient of strong relationships. Recognizing and understanding interests and needs of other parties, and being willing to negotiate, sets the stage for a strong relationship. The Town Official recalls the reciprocity and sense of trust in the early interactions with The Solar Company: *They introduced us to [The Solar Company], they had a good communication and conversation, we felt the trust. "Here's what we need from you, here's what you need from us." [The Solar Company] wasn't going to commit to a project without them having trust in us.* This quote shows how a sense of trust and reciprocity can emerge from a single conversation, and also reiterates the importance of strong, positive engagement early on.

Reciprocity also accompanies a sense of respect. Project Developer says *"It takes two willing parties to make it happen, like if we propose something, but the town doesn't want to do that, then obviously we're not going to force it upon them, and at the same time, if the town wanted, you know something that we didn't want to do... I mean it could happen. I mean there's got to be some benefit in it for all parties."* The Code Officer commented *"if we asked for something, they usually are receptive to what we're asking them".* This further

demonstrates the reciprocal and respectful relationship that supported progress in this project, as well as intermediation efforts.

The Initial Developer describes the reciprocity of the relationship between the developer and the town (which reflects the outcome their initial brokering intermediation efforts) with specific references to mutual benefits on both sides:

I think that the town would say that we've tailored the benefits directly to their needs and wants, which is of value to them. And to us, we have a [person like the Code Officer] and the town board – they roll up their sleeves whenever an issue comes up, and has helped us, I mean, we were the first ones to get a permit in New York State, and that's because of the cooperation with the town. And it extends beyond the town, we work with the county, and we're working with people on the state level... if we get to construction quicker and have fewer problems, there's a direct benefit to us as well.

This quote demonstrates how this relationship is of value to both parties, and how a reciprocal and trusting relationship enables these mutual benefits. As a recommendation to others, the Town Official adds “*If you're going to do solar, you have to work with the solar company. Pick one you can trust, that you can work with, that will work with the community,*” implicitly recognizing the trust and reciprocity in the case of this project. Regular communication, trust, and reciprocity all support a strong working relationship and clarity about goals and shared or divergent visions.

Agency

Finally, relationships are enabled by a sense of agency by both parties. The sense of agency of the Code Officer is evident when they question the feasibility of the developer's proposal, secure funding, and go on to coordinate the study. However, perhaps no quote summarizes the Code Officer's sense of agency more than their response when asked “what if it doesn't go well?” The Code Officer replied: *Well, there is no “if” [everything goes well]*

because it will go well – we won't allow it to go any other way. And it looks very positive for the community.” This sense of agency and efficacy as an intermediary reflects all of the enabling factors described above, from the strong working relationship and relational dynamics with the Project Developer to the individual attributes of the Code Officer.

Relational dynamics are both shaped by intermediaries, and also enable intermediation. Because of the strong relationship between The Town and The Developer, the Project Developer is able to benefit from a positive working relationship with trusted local officials like the Code Officer and Town Official that helps them build public support. Conversely, the reciprocity, respect, and sense of agency felt by the Code Officer and the Town Official in this relationship enable these local actors to ensure that The Solar Company brings substantial benefits to their local community.

Relationships emerge from micro-level interpersonal interactions and relational dynamics, and are shaped both by contextual factors, such as the institutional objectives of The Town and The Solar Company, as well as the individual attributes of individuals involved. In this case, the positive relational dynamics are enabled both by the personal attributes and perspectives displayed by the practice stories of the Code Office and Project Developer, and their intermediation efforts, which are in turn, enabled by their professional roles and institutional contexts.

3.5 Structure & Agency: Intermediaries in Context

The sections in this chapter respond to my second research question: *What personal attributes and contextual factors enable and constrain the actions, objectives, and efficacy of*

individual actors in intermediary roles? Sections 3.1-3.4 introduced four sets of factors that shape the actions, objectives and efficacy of individuals in intermediary roles: professional capacities, contextual factors, individual attributes, and relational dynamics. An individual's professional capacities enable intermediation by providing the legitimacy, expertise, and access to interact with others that all support intermediary actions. Institutional and structural factors enable and constrain intermediation through setting supportive contextual conditions or directly supporting individuals, such as by providing available funding and making space in allocation of other formal responsibilities to include intermediation actions. Company culture and organizational priorities also influence the objectives of an intermediary. Personal factors matter as well, as reported by the individuals and noticed by others who interact with them: the individual attributes introduced in the practice profiles from section 2.3 are reinforced in this section with the corroboration from other actor perspectives. Finally, all these factors – professional position, institutional context, and personal competencies – come together to support the relational dynamics that provide the foundational context for intermediary actions. In short, intermediary roles are enabled both by structural and individual factors, as demonstrated through the profiles of the Code Officer and the Project Developer, which are synthesized into individualized summaries below.

The CODE OFFICER in context

The actions, objectives, and efficacy of the Code Officer as an Aligner intermediary are shaped by both contextual and personal factors. As an example of an emergent intermediary whose formal position expanded into the role, the Code Officer's intermediation activities became so instrumental to the planning of The Solar Project that

their emergent intermediary role as a coordinating Aligner became formalized into a new “Solar Coordinator” position. The Code Officer acknowledges the importance of both external support and individual capacity for the solar coordinator role in the quote below.

“If I was to walk into a community right now and they were to ask me that question of, well, what do we need to make this happen? You need to dedicate one person to this role as a solar coordinator and support that person and let that person go out and figure it out.”

The Code Officer emphasizes the importance of external support (“support that person”), and also implicitly suggests the need for that person’s individual capacity as someone who is motivated, curious, and capable enough to “go and figure it out”. This quote illustrates the overarching point of this chapter, which is that individuals in intermediary roles are enabled both by structural factors and individual agency. If the Code Officer had all these individual attributes, of committed pragmatism, foresight, and the motivation to “go and figure it out”, but they did not have the support from the town board, or the professional capacity to expand beyond their formal position, they would not have had the available time or support to expand their duties and step out into this emergent solar coordinator role. Thus, individual competencies and characteristics can be insufficient on their own, without these supportive contextual factors.

On the other hand, if the town board provided the support and additional funding for the Code Officer to take on solar coordination responsibilities, but the Code Officer did not have these individual characteristics of curiosity, care for their town, support for renewable energy, and committed pragmatism to figuring out how to ensure proper solar siting, the lack of synergistic individual characteristics would’ve constrained the efficacy of the Code Officer’s intermediation responsibilities. Without the Code Officer’s individual subjective perspective and personal attributes, they might never have questioned the proposal for

bees and sheep under the panels, never have coordinated the feasibility study, never have taken the time to share findings with the County Planner and others, and never have considered the implications of invasive species under the panels. Thus, the “Solar Coordinator” role may be created and supported by external forces, but it is the personal motivations, perspectives, and attributes of the individual person in this position that truly differentiate the capacity and efficacy of the intermediary role.

The PROJECT DEVELOPER in context

The brokering intermediation efforts of the Project Developer are also enabled by both contextual and individual factors. The role of a project developer implicitly includes some level of relationship management in order to work between stakeholders and move the project forward, but in this case, the Project Developer makes this implicit intermediation role an explicit and prioritized aspect of their position. The sections above also show how the Project Developer is contextually situated within a company that has a number of structural factors to enable their brokering intermediation actions.

As an individual intermediary actor, the Project Developer has learned from prior experience, personally supports active engagement and has a number of individual attributes that support collaborative interpersonal relationships. They are also employed by a company that supports these values, and has a positive relational dynamic with local officials who are also receptive and engaged. All these factors together support the Project Developer’s intermediation efforts as a Bridger to broker better relations and build public support for the project.

The State Energy Agency: Individual Actors within Organizational Intermediaries

This chapter has highlighted how both contextual factors and individual attributes enable intermediation. The two main examples of individual intermediaries in this thesis are the Code Officer and Project Developer, who both go above and beyond their positional responsibilities with their intermediation. However, even the actions of organizational intermediaries are put into practice by individual people in explicit intermediary roles.

Two participants, State~Local PM and State~Developer PM, both work within the State Energy Agency, which is itself an organizational intermediary. For these two individual actors working within the context of an organizational intermediary, their objectives and actions as intermediaries are more clearly delineated by the organization's goals. However, although this intermediation is explicitly part of their formal positional responsibilities, there is still room for individual agency to shape these individual intermediary roles.

The State~Local PM states that while their objectives are generally set by state policies and organizational goals, there is still flexibility and space for individual agency and team direction in the implementation.

“A lot of the direction comes from within our team, and what we hear as needs from the communities themselves – or as we get more and more questions that we can't answer, we know that that is a need, as well. But overall accountability-wise, our strategies are outlined in the Clean Energy Fund investment plan – so, to be official official, that's where the rubber meets the road there – where we have our goals and our strategy outlined. And, of course it's not totally set in stone. A lot of what we do is maybe not explicitly stated in there, but is definitely related to or in support of the goals that are explicitly stated in there.”

This quote reflects the enabling factors mentioned in the sections above: formal legislation shapes the objectives of individuals within the State Energy Agency, and their positions

have explicit intermediation responsibilities. However, there is still room for individual agency and direction that comes from within the team, as well as from the relational dynamics from interacting with communities themselves. Thus, the personal perspectives and individual attributes of the people in these explicit intermediary roles – such as adaptive learning to understanding the perspectives of others – are still important factors that affect intermediary actions.

This chapter thus identified the enabling factors that enable intermediation, and also illustrated these factors by situating several individual intermediaries within the context of structural and individual factors that enable their actions. The essential point coming out from this section is that while this thesis may focus on the individual actor-level perspective, all these individuals are embedded in sociotechnical systems and institutional networks, and thus must be fully contextualized within these elements in order to truly understand their actions and efficacy.

DISCUSSION

In this final discussion section, I review my responses to the original research questions, synthesize several central themes from the research, provide a summary of the intermediary role, connect individual intermediaries to the broader transitions context, acknowledge several caveats and cautions, and conclude with some implications and suggestions from this research.

The previous three chapters responded to my two research questions about individual actors in intermediary roles. The first question asked about the specific individual people in intermediary roles, and their specific actions and functions. The second research question focused on factors that enable these actions, and the objectives and efficacy of individual intermediaries.

In Parts 1 and 2, I responded to my first research question with the identification and descriptions of individual intermediaries. Part 1 sets up the project context and identifies the actors, interests, and issues involved in the planning process for The Solar Project. These actors, interests, and issues provide the detailed action contexts for Part 2, where I identify individual intermediaries based on their specific actions and involvement with the project issues from Part 1. I develop four intermediary roles—Bridgers, Conduits, Aligners, and Shapers—in order to conceptualize specific relational actions and functions, based on the four intermediation processes. The variety of individuals identified and discussed as intermediaries in Part 2 demonstrates how the intermediary role describes context-specific actions and functions of an individual, although these actions are not

necessarily directly aligned with their formal job description. This informal and unarticulated intermediary role is shaped by the personal attributes and subjective perceptions of these actors, which are explored in more depth through the two individual extended narrative practice stories in section 2.3, which expands upon the identity of individual intermediaries for RQ1 and also sets up the individual attributes as enabling factors in RQ2.

My second research question is addressed in Part 3, where I identify several categories and types of contextual factors and personal attributes that enable the actions and efficacy of intermediary actors: professional capacities, institutional contexts, individual attributes, and relational dynamics. Individual attributes comprise personal competencies characteristics, such as temporal awareness or committed pragmatism, as well as personal subjective perspectives, values, and experiences. RQ2 establishes that individual intermediaries are enabled by multiple individual attributes and contextual factors, which emphasizes the importance of both subjectivity and structure to this functional role.

By applying this individual actor-level perspective to understand the people in intermediary roles, these research findings illustrate how individual attributes, such as subjective perspectives and personal behavioral characteristics, directly enable the intermediary role. Although the literature primarily focuses on organizational intermediaries, the individual people enacting intermediation processes are enabled or constrained by these personal attributes, and thus, the individual actor-level is important to understand. Therefore, this research contributes to the literature with an

individual-actor perspective on intermediaries, and tells the story about the individual people whose daily intermediation actions help advance transitions.

Furthermore, this case study of intermediation within an empirical transitions contexts demonstrates the link between the micro-level context of individual actors and actions and the advancement of macro-level transition goals. The descriptions of these individual actors suggest that within the context of this empirical case study, the functions of individual intermediaries contribute to the advancement and successful permitting of The Solar Project within this sustainability transition context, and therefore, these micro-level intermediation actions support the overall energy transition within New York State. Figure 6 below illustrates this connection between the micro-level actions and enabling factors of individual intermediaries with the macro-level changes in sustainability transitions. The findings of this research are indicated by the first two boxes, with the individuals in intermediary roles established in RQ1, and the enabling factors outlined in RQ2.

Figure 6. Intermediaries in Context

Intermediaries in Context

Catalyzing connections to advance transitions

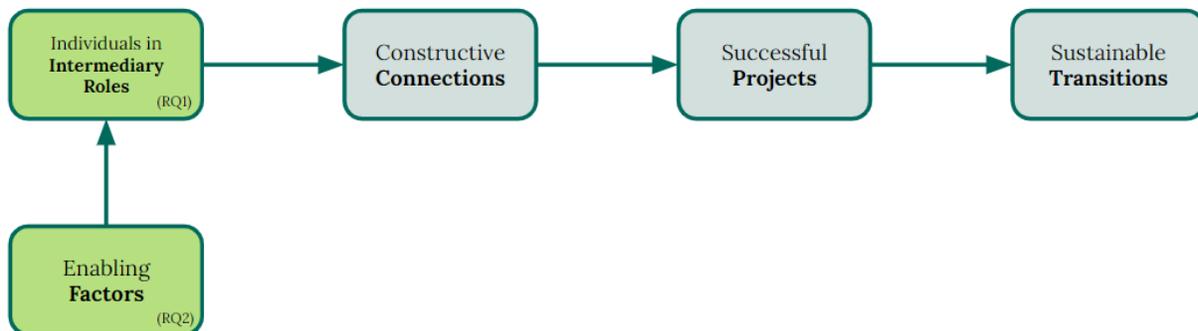


Figure 6 above represents the greater context of this thesis research, with individual intermediaries in the context of their impacts in broader transitions. The findings of this research are indicated by the first two boxes, with the individuals in intermediary roles established in RQ1, and the enabling factors outlined in RQ2.

This research demonstrates the importance of intermediary roles within micro-level contexts of sustainability transitions, as well as the importance of the individuals who play these roles, since individual factors shape action, as indicated in the green boxes in the diagram in Figure 6 above.

The following two sections briefly discuss two additional themes that emerged as key findings throughout this research, in addition the responses to the two research questions about individual intermediaries and enabling factors. First, the dimensions and conceptualization of the intermediary role itself was an unexpected outgrowth of the observation that intermediation activities, while relatively easy to identify when looking for them, are often an unarticulated and unacknowledged aspect of an individual's formal position or responsibilities, suggesting the need for a formal conceptualization to make this role explicit. This conceptualization of the intermediary role is summarized below.

The second theme involves the findings around the importance of relational dynamics, constructive partnerships, and the shared values that lead to this collaborative work. These observations are based on the particular empirical context within the institutional dynamics of New York State's energy transition and the outsized importance of the relationship between the town and developer. Though contextually specific, this second theme speaks more broadly to the important role of individual intermediaries as actively shaping, and shaped by, the interpersonal and relational contexts in which they operate.

The Intermediary Role: Individual, Relational, and Functional

One unexpected and additional finding from this research is that the intermediary role itself is an unarticulated role that can be an important aspect of what people do in a role, even if it's not explicitly acknowledged or discussed. As revealed in interviews with the participants, the individual intermediary role is an unarticulated and informal role that is actively shaped by the people who play it. Defining the four intermediary roles based on their specific activities reflects that intermediation is more than just a process by an abstract person – intermediation is actively shaped and influenced by the individual people who play these roles.

This thesis explicitly frames these relational connecting activities as intermediation activities, and, by making explicit this otherwise unarticulated individual intermediary role, these findings provide the basis to recognize and support individual intermediary actors, whose micro-level actions provide key relational infrastructure to catalyze and sustain transformative change.

Individual intermediaries are defined within this thesis as individual people, positioned in between other actors, who transfer, broker, coordinate, configure, and contribute to advancing transitions. The individual actor-level perspective on intermediaries recognizes the influence of the personal subjectivities of these individual actors, and how their perceptions, experiences, and values shape their actions.

In addition to the importance of individual actions, my research highlights the importance of the *interactions* of intermediaries: as relational roles, all intermediary actions involve

engagement with others, and relational dynamics play an essential enabling part supporting intermediation. This intrinsically relational role is embedded within a given micro-level context, and plays a functional part in the greater whole of transitions.

There are three dimensions of the intermediary role:

First, the intermediary role is a **functional** role, which reflects its structural components – positioned in between others, embedded in context, connected to greater transition processes, and enabled by contextual factors.

Second, the intermediary role is a **relational** role, which reflects its relational processes and activities. This role is more than just a static position – the interactions and interpersonal dynamics shape efficacy and enable intermediation.

Third, the intermediary role is an **individual** actor role. Whether the intermediary role is explicit or implicit, emergent or appointed, all intermediaries are defined first and foremost by their intermediation actions, regardless of whether it is their primary purpose or formal responsibility. Therefore, this informal, contextual, relational, functional role can be fluidly adopted by a variety of actors within different contexts.

Four distinct intermediary roles –Conduits, Bridgers, Aligners, and Shapers–correspond to the four identified intermediation processes (transferring, brokering, coordinating, and configuring). This terminology can be used to describe the individuals who step into these functional roles (for example, “*don’t pull her off that project, she’s acting as an Aligner to*

coordinate things and ensure the process goes smoothly") and also to identify and diagnose the need for intermediation (as in, "we need to find someone to play a Bridger and mediate tensions to broker better relations".)

Fundamentally, intermediaries are connectors. In addition to making direct connections through their actions, intermediaries make connections from their personal perspectives. The quote from the Project Developer that reveals their perceptions and prioritization of public engagement also represents a bridge between the technical and social dimensions of a project: *"at first, development was all about the technical side of a project... But over time you kinda start realizing... your number one success factor is the public... Developing a project is all about managing your stakeholders and figuring out "how do we bring them on board"*. In this quote, the Project Developer alludes to a common conceptual dichotomy that exists between the "technical side" and the "people". Although technology and people are inextricably intertwined within the sociotechnical systems of sustainability transitions, many actors operate with a focus in one realm or the other. Thus, it is especially important that intermediaries, such as the Project Developer, have the capacity to connect and integrate these two dimensions which may otherwise remain separate.

This individual actor-level perspective also humanizes the intermediary role with an emphasis on the importance of the individual people in these positions, and their individual subjective perspectives which shape their actions. While each individual brings a unique set of attributes to the role, the attributes themselves that enable intermediation are not exceptionally rare and can be found, or developed, within a broad range of people that have certain essential characteristics.

By illuminating and reframing these otherwise unarticulated actions and responsibilities into an explicit role, this research illustrates the role of individual intermediaries, illuminates what intermediation looks like on the ground, and reconceptualizes the intermediary role itself as an individual actor role that is functional, relational, and often unarticulated. This formal conceptualization brings an awareness to the importance of these relational connections, and the individuals in the intermediary roles who catalyze connections and make the process of change possible in the transition towards a more sustainable future.

Catalysts for Connections: Intermediaries in Transitions

The actions of the individual intermediaries in this case have impacts that stretch far beyond their immediate sphere of influence. A successful energy transition in New York State requires the successful permitting and construction of large-scale solar projects, and The Solar Project in this case was among the first large-scale solar projects permitted. The importance of the relationship between the town and the developer is repeatedly cited as a key contributor to the overall success of the overall project. This core partnership is initially catalyzed by the brokering intermediation activities of a Bridger intermediary (the Initial Developer), and is maintained by the relational dynamics and individual factors of actors involved, as well through contextual factors like the owner-operator contract that structures a long-term agreement. This relationship also enables further intermediation in other actors, reflected in the importance of “relational dynamics” as an enabling factor. This research unpacks that relationship through the perspective of intermediation, and

reveals the complexity of factors behind it, including the emphasis on the importance of clearly articulated and shared common values and objectives.

The strength of this relationship is due to multiple factors – from the effective Bridger work of the Initial Developer in brokering that initial relationship, to institutional support from The Town and The Solar Company. However, the dynamics of this relationship are significantly shaped by the individual attributes and personal perspectives of the individuals involved. Section 2.3 demonstrates a range of behavioral characteristics and personal attributes that make the Project Developer and Code Officer effective intermediaries.

A closer analysis of the individual actors and relational dynamics within this case reveals the importance of shared values and priorities in successful intermediation contexts. Another emergent overarching theme addresses the shared vision and objectives across many actors to both advance renewable energy for New York's transition and also to provide benefits to local communities. The shared values and priorities of supporting these communities, in addition to advancing renewable energy technologies, are reflected at the local level by the Code Officer's personal perspective and support for renewable energy, by the Private Developer who has learned from experience the value of providing community benefit to gain public support, and at the state level, whose mandate from the "Climate Leadership and Community Protection Act" explicitly includes communities in its name. This particular case of The Solar Project provides a model for how individual subjective perspectives, preferences, and values can support coordinated and cooperative action. Having these overarching objectives explicitly articulated between actors also guides the

path of project development, and prioritizes actor's attention for communities as well as technologies. Therefore, this case study also demonstrates how having shared objectives is an important factor that both enables—and is enabled by—the work of intermediary actors. Intermediaries are therefore essential in these transition contexts where there are multiple objectives. To integrate equity as part of the transition goals and prioritize benefits to communities, intermediaries must work across actors and interests for a more efficient, equitable and effective transition.

Just as a chemical catalyst initiates and expedites a process or reaction between reactive components, intermediaries proactively enable and enact the micro-level processes of sustainability transitions by connecting actors through their intermediation activities. As a relational role, intermediaries create connections between other actors, interests, and elements that have impacts within the context of a greater system. In the same way that power lines and roads provide essential *physical* infrastructure to transfer resources across society, intermediaries provide the *relational* infrastructure of transitions through micro-level relational intermediation processes. These interactions, in aggregate, create the interactional framework that moves transition processes forward. Therefore, intermediaries create and support the key relational infrastructure to sustain transformative and systemic change.

Implications & Suggestions

This research provides the conceptual basis to recognize intermediation actions, identify individuals in intermediary roles, and distinguish the contextual factors that support these individuals and their intermediary actions and functions. There are three primary

implications and suggestions for action, focused on supporting existing individuals, identifying intermediation needs within a given context, and building up intermediary capacity through training.

→ Recognize & Support Existing Intermediaries

This explicit discussion of intermediaries provides the basis to recognize the need for intermediation within a context, and identify individuals who have the capacity to fill these roles as well as provide support and enable existing intermediary actors and actions. This could include capacity-building support for professional competencies, integrating intermediation capacities into hiring practices and job descriptions, and demonstrating value and highlighting effective intermediation to create more space for relational dynamics and intermediation.

→ Identify & Respond to Intermediation Needs

This explicit discussion of intermediation also enables a contextual awareness of the general need for intermediation processes. Just as the presence of intermediary actors can be recognized through their actions, so too can the dearth of intermediaries be identified based on the need for intermediation.

This project-level anticipatory planning for intermediation needs could be supported by requirements for “intermediation plans” within RFPs, grant applications, and proposals, which also opens the door for metrics and evaluation criteria to identify and assess successful intermediation. Mainstreaming intermediation within planning processes ensures that whenever ‘solutions’ are being designed, or projects being planned, consideration is also given to the intermediation processes that enable this implementation

- and ensures there will be individuals with the bandwidth, support, and funding, to undertake these intermediation actions.

→ ***Build up intermediation capacity with trainings to support “Leading from Between”***

While the intermediary role is shaped by the individual attributes of the individuals who play it, many of the key competencies can be taught or supported. Several of these attributes observed in individual intermediaries are particularly important in transitions, for example, the temporal awareness of foresight and pragmatic problem solving enables an individual to see how different pieces fit together, and connect micro-level actions to the broader transition goals. Contextual and relational interpersonal awareness is also essential in complex systems, which enables an individual to recognize and understand the different perspectives and objectives of other actors in the system, and more effectively navigate the interpersonal relational dynamics that are inherent to the intermediary role. Both of these individual competencies could be supported in workshops that encourage temporal and contextual awareness, and individual reflexivity.

Intermediation trainings could also be tailored to support intermediaries through building key skills to support relational dynamics as well. Relationships depend on the individual actors involved as well as the structural contexts that shape their interactions and priorities. The first step to supporting stronger relational dynamics is to explicitly recognize their importance. Professional facilitators and mediators are third-party actors who are hired to support relational processes, with work that is similar to intermediaries. However, in contrast to intermediaries who are embedded within the existing micro-level context, facilitation and mediation professionals usually exist outside the immediate context of action, and need to be brought in as consultants or contractors – either

proactively in anticipation of a need, or after a conflict has already been identified. In many contexts, there are limited resources to finance this external support, or there may not even be an awareness of the need until a conflict emerges.

However, actors who are already situated within a given context could be supported through a relational intermediation training to build some of the intermediation skills and capacities to act as “inter-mediators” within a given context. There are training sessions that could be done with actors likely to be in intermediary roles—such as project and program managers—to support stronger dialogue and process facilitation for coordinating and brokering intermediation processes.

In this view of intermediation as a trainable capacity, the “intermediary” role is not unlike the concept of a “leadership” role, which has an existing common connotation in organizational and informal parlance. Both formal and informal leaders exist, there are certain skills that enhance or detract from successful leadership, and context matters: just as one cannot act as an intermediary without being “in-between”, one cannot act as a leader without someone or something to lead. Therefore, perhaps the intermediary role at an individual level can be viewed as “leading from between”. While intermediary actors may not be the first name on the report, or the public face of the company, they play an essential role within these micro-level contexts that contribute to advancing overall transitions.

Caveats & Cautions

There are several important caveats and cautions to note about this research project. First, the analyses in this thesis are based on a small number of select individuals, so these characteristics and conclusions are extrapolated based on only a few people. Other examples would surely identify other enabling factors, or other intermediation activities.

Also, the empirical context of The Solar Project and New York's energy transition is unique for a number of reasons, from the baseline favorable conditions, minimal conflict, and existing support at the local project level to the unique moment in history with broad state support for large-scale renewable development on the state level, and this particular project being a frontrunner with a fair amount of attention and expectation-setting potential. Additional specific factors around the project made the siting process easier as well and likely mitigated tension and opposition. For example, the site is not on prime farmland so it's less controversial, and the close proximity to transmission lines might enable more available funds for outreach efforts on the developer level.

Finally, the four intermediation processes—and roles—I identify are neither comprehensive, nor mutually exclusive. There is much beyond resources, relationships, processes, and products that influence transitions. These framings are presented as a starting point to bring this intermediary conversation down to the micro-level of transitions with individual people in these roles, since this intermediary role is inherently defined and shaped by context and the individuality of the actors in these roles. Thus, the findings in this research are not a step-by-step blueprint for intermediation.

However, my descriptive analysis is primarily aimed at illuminating the intermediary role at the individual actor level and making explicit what is otherwise an unarticulated role, so while these findings may not be widely generalizable, my hope is that they can stimulate increased awareness and discussion

CONCLUSION

Sustainability transitions in sociotechnical systems require coordination across actors, issues, and interests. Individual actors in intermediary roles are essential connectors who bridge these perspectives and facilitate these processes. These individual intermediaries are the micro-level building blocks for collaboration and coordination of projects and processes.

The findings from this research are not unique to energy contexts, nor to sustainability transitions overall. Indeed, “brokering”, “configuring”, “coordinating” and “transferring” are common functions in any organizational system, enacted by any variety of individual intermediaries. Rather, what this paper aims to emphasize is the importance of these individual intermediary roles in the context of sustainability transitions. Sustainability transitions are unique from other organizational contexts because of the inherent normative orientation towards a more sustainable future, the expanse of actors and interests involved in sociotechnical systems, and the need for some collective action or integrated coordination of the projects and pieces that make up the larger transitions.

In the pursuit of a sustainable future, it's easy to be most compelled by technological fixes and exciting innovations. Furthermore, the social dimensions of sociotechnical systems are often focused on producers and consumers – whether improving sustainable practices or gaining consumer acceptance of new technologies. However, the human dimension of sustainability transitions is far more than just producers and consumers. Individuals in intermediary roles catalyze critical connections within socio-technical systems. These individual intermediaries—the people in between—catalyze connections within socio-technical systems to support the transition towards a more sustainable future. Thus, by making explicit this otherwise unarticulated individual intermediary role, this thesis provides the basis to recognize and support individual intermediary actors, whose micro-level actions provide key relational infrastructure to catalyze and sustain transformative change.

APPENDIX A

Recruitment Email

Dear **[Stakeholder]**

I'm a graduate student at Cornell working on my thesis research about stakeholder participation in planning renewable energy projects.

I understand from **[source]** that you've had some involvement with [The Solar Project], which I'm using as a case study for my research. I'm working to understand the project through the perspectives of a wide range of people involved.

Would you be willing to speak with me at some point in the coming weeks to share a bit about your perspective and experience with [The Solar Project]? Your perspective would be a welcome addition to my research this semester.

If so, please let me know when would be most convenient for you. I am happy to answer any questions about this project that you may have.

I hope to hear from you soon, and look forward to connecting.

Respectfully,
Frieda

APPENDIX B

Semi-Structured Interview Guide

I. Intro / Consent

- Thank you for taking the time to speak with me today. As I mentioned in my email, I'm a graduate student at Cornell University researching differing stakeholder perspectives on the [The Solar Project].
- In our conversation today, I'll ask about your experience with [The Solar Project], as well as some of the key issues and people that shaped the process. The conversation should last approximately 45 minutes.
- Your participation in this research is completely voluntary. You may withdraw from the study at any time, and may decline to reply to any question you do not wish to answer.
- Your identity will remain confidential and unassociated with any of your responses. While anonymized excerpts of quotes may be used in the analysis, no statements will be attributed to you by name or position, unless I specifically contact you for additional consent.
- With your permission, the interview will be recorded and transcribed for data analysis purposes. I can also stop recording at any time or you can let me know if there is specific information you would like to remain confidential.
- Do I have your permission to record this interview? [Verbal consent: Yes/No]
- Do you give consent to participate in this research? [Verbal consent: Yes/No]
- Do you have any questions for me at this time?
- Reminder: goal is to understand many different perspectives on the project, so I'm most interested in how you see it through your eyes and experience.
There are no right or wrong answers

II. Story of Involvement

- Could you first please briefly introduce yourself?
- Please tell me the story of your involvement with [The Solar Project].
Probes:
 - **Catalyst:**
 - How did you first hear about it and from whom?
 - **Objectives:** (project & personal goals)
 - What would you say are the **main goals** of the project?
 - What is your **personal goal** for your involvement?
 - What do you see as the ultimate vision for this project?
 - **Role:**
 - What's your personal role in this project?

- What would you say were some of the **key Decision Points** in the planning process?

III. Key Issues

- **Major Issues -**
 - What would you say were the major issues that came up around the planning process for the [The Solar Project]?
 - **Back-up probes for “issues”:** “Considerations” or What did you “Think about” or “take into account”
- **Personal Issues -**
 - What issues did you think were the most important to you personally? Which did you care most about?
- **Personal Interests -**
 - Why did you care about these issues? What matters to you about this project? What’s important? What are the stakes?
- **Focus on Top Personal Issue**
 - What was your role trying to advance this issue?
 - Has your perspective on this changed over time?
 - Was it collaborative? Who helped foster that collaboration?

IV. Key People & Interests -

Now I’m going to ask you to think about some of the other people involved in this case – it’s OK if you don’t recall their name, any description of their role is fine.

- Who were some of the **other key people** that influenced this process? (Who made a difference?)
 - *Can probe for functions, if nothing comes up :*
 - a) Who brought new ideas to the table?
 - b) Who got people to show up at meetings
 - c) Who do you think was shaping the overall project vision?
- **Other’s Issues**
 - What do you think other people cared about the most?
 - a) How did you know that they cared about them?
- **~Probe for more key people~**
- **PROBES FOR SPECIFIC PEOPLE IN CONNECTING ROLES -**
 - **Position:** Who were they?
 - **Engagement:** How did you interact with them?
 - **Actions:** Specifically what did they do?
 - **Enabling factors:** How were they able to do that?
 - **External structures:** what funding or regulatory structures made this possible?

V. Perception of Process

Now I’d like to ask you about your perception of how this process played out

- **Outcome:** How do you think about how things turned out with [*insert top issue*]?
 - **Initial Expectations/Exp. Met?** Do you feel things turned out differently than what you initially expected?
- **Influence:** Do you feel like your interests were at least in some degree reflected in this draft permit?
- **Process:** Do you feel like others heard what you had to say?
 - Was this a fair process? [**to you interests, or to everyone else's**]
- **Missing Actors:** Who should've been at the table but wasn't? Why?

VI. Conclude

- Just two last questions here and then we'll wrap up-
- **Best case / Worst case scenario** – *What does it look like if everything goes well?*
- **Snowball Referral:** If I was going to talk to someone else who really had a hand in shaping this process, who should I go to?

Anything else you would like to tell me about the project? Thank you so much for your time!

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