Problem Statement

New Zealand's infrastructure governance is dominated by centralised decision-making, where funding, planning, and policy setting are tightly controlled at the top. Local councils, Maori, residents, and industry are often consulted only after key decisions are made, resulting in misaligned priorities, reduced trust, and inefficiencies in project execution.

These types of governance structures form a one-to-one or one-to-many type of network or relationship between the policymaker and the service provider.

Policy	Policymaker	Service Provider	Relationship or Network Type	Stakeholders
Road Investment	Waka Kotahi	Local Council	One-to-one	Waka Kotahi, Local Council
Hospital Build	Ministry of Health	Architects, Contractors, Hospital Admins	One-to-many	Ministry of Health, Architects, Contractors, Hospital Admins

In order to have multiple policymakers manage the same policy using an analog or single policymaker system the policy has to be scaled horizontally. A good example of this is when one policymaker (e.g. Waka Kotahi) consults with another policymaker (Local Council) for their help with a policy or project. While it may seem that both policymakers are working on the same policy, in reality, they are working on two separate policies. The first policymaker is working on the original policy (e.g. road investment 1), while the second policymaker, works on a separate policy (e.g. road investment 2).

Waka Kotahi	→	Road Investment 1	→	**Local Council**	→	Road Investment 2

Both policymakers are referencing the same road in their policies, but from two different points of view.

This tight coupling between a policy and the policymaker managing it creates all sorts of problems, including:

1) Increase in policy redundancy and inconsistencies

When multiple policymakers manage separate instances of a policy, redundancy arises because each must maintain their own version of the policy and its associated rules. This can lead to misinterpretations and inconsistencies, as each policymaker may develop a different understanding of the policy's intent and implementation.

2) Increase in policy latency

When multiple policymakers manage different instances of the same policy, it increases latency and delays infrastructure delivery, as each must oversee their own version or interpretation of the policy.

3) Lack of redundancy in alternative service providers to fulfill a policy

A lack of service providers disrupts the supply chain and creates critical gaps in infrastructure—for instance, when there are not enough contractors available to build a road or when a manufacturer or supplier runs out of roading material.

4) Inability to share data

Policies or requests are unidirectional, meaning data or information flows in only one direction—from one stakeholder to another. If a different stakeholder needs access to the same data, the policy must be scaled horizontally by creating a separate policy or request for it.

5) Lack of synergy or vertical scalability

The unidirectional nature of a policy or request means that stakeholders have no way to combine their policies or efforts into a single, shared policy to create higher forms of abstraction or organization. As a result, policies remain static, flat, and cannot extend beyond a single level of abstraction.

6) Increase in costs, waste and environmental damage

The lack of synergy or vertical scalability causes stakeholders to operate independently and in isolation from one another. Common business processes are often repeated or duplicated—for example, advertising to attract customers, using separate booking systems to schedule jobs, or relying on separate delivery systems to distribute materials.

This behavior has a knock-on effect: it increases the amount of waste each stakeholder produces, drives up the costs of delivering critical infrastructure and contributes to environmental damage, such as rising CO_2 levels.

Solution Statement

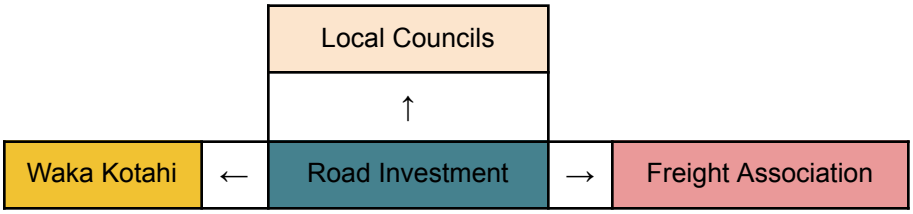
A decentralised or shared governance system where policymakers can cooperate with one another and manage policies at scale.

For example, Waka Kotahi, Local Councils, Freight Association all working together to manage the policy for a new road. Similarly the Ministry of Health, DHB's, Nurses Union and Maori Health organisations all working together on the same policy to manage a new hospital build.

These types of relationships form a many-to-many type of network.

Policy	Policymaker	Service Provider	Relationship or Network Type	Stakeholders
Road Investment	Waka Kotahi, Local Councils, Freight Association	Roading Contractors, Councils, NZTA	Many-to-many	Waka Kotahi, Local Councils, Freight Association, Roading Contractors, Councils, NZTA
Hospital Build	Ministry of Health, DHB's, Nurses Union and Maori Health organisations	Architects, Contractors, Hospital Admins	Many-to-many	Ministry of Health, DHB's, Nurses Union and Maori Health organisations, Architects, Contractors, Hospital Admins

The key to this system is that the policy is being managed by multiple policymakers simultaneously. They are given the tools in which to subscribe to the policy and to collaboratively work together to add, update or delete the rules that make the policy.



The loose coupling between a policy and policymaker creates many benefits including:

1) Decrease in policy redundancy and inconsistencies

When multiple stakeholders or policymakers have access to the same policy, redundancy is reduced because everyone operates from a single, consistent version of the policy and its rules. This shared access ensures a common understanding of the policy's purpose and application, minimizing the chances

of misinterpretation or inconsistencies.

2) Decrease in policy latency

When multiple stakeholders or policymakers manage the same instance of a policy, it reduces latency and enhances infrastructure delivery by aligning everyone on a single, consistent version and interpretation of the policy. This shared understanding streamlines decision-making and minimizes delays in implementation.

3) Increased redundancy in alternative service providers to fulfill a policy

A multistakeholder political system harnesses the collective resources and efforts of all participating stakeholders or policymakers. This broadens the pool of available resources, enhancing redundancy within the infrastructure system or supply chain—for example, by increasing the number of contractors architects can access or the number of manufacturers or suppliers of essential materials.

4) Ability to share data

Policies or requests are bidirectional, enabling data to flow simultaneously between stakeholders. When additional stakeholders need access to the same data, the policy can be scaled vertically by allowing them to subscribe to the existing policy or request.

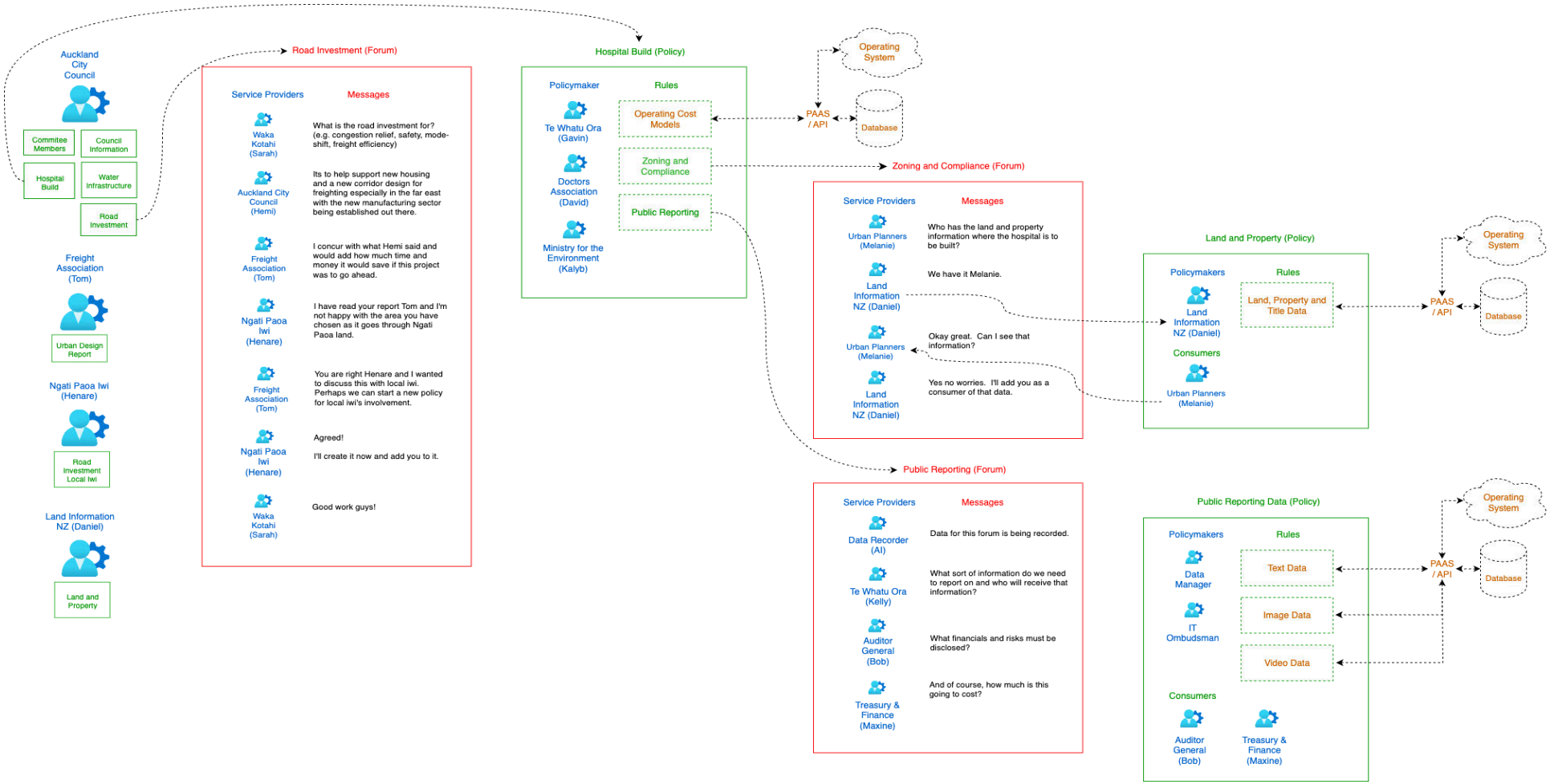
5) Increase in synergy or vertical scalability

The bidirectional nature of a policy or request allows stakeholders to merge their individual policies or efforts into a single, shared policy, enabling the creation of higher levels of abstraction or organization. As a result, policies are dynamic and can span multiple levels of abstraction.

6) Decrease in costs, waste and environmental damage

With increased synergy and vertical scalability, stakeholders work in a mutually interdependent framework where workflows are shared rather than siloed. Common processes—like coordinated advertising campaigns, unified patient-booking systems, or a centralized delivery system for distributing medical supplies—are jointly leveraged by multiple parties.

This cohesive approach produces tangible secondary benefits: stakeholders generate less waste, infrastructure delivery costs decline, and overall environmental damage—including CO_2 emissions—is reduced significantly through resource efficiency and collaboration.



The above image demonstrates how multiple stakeholders can cooperate with one another through the same policy and share in the policy or rule making process. For example the Auckland City council could have a policy for a Hospital Build that could be managed by multiple policymakers who have the capabilities to create the rules of the policy together. Those rules can be converted into forums for service providers to discuss or be used to share data or other real-time services through API's.

This approach of using human and digital tools to manage governance significantly reduces the amount of time and cost needed to manage large scale projects or policies that necessarily require the cooperation or input of multiple stakeholders.