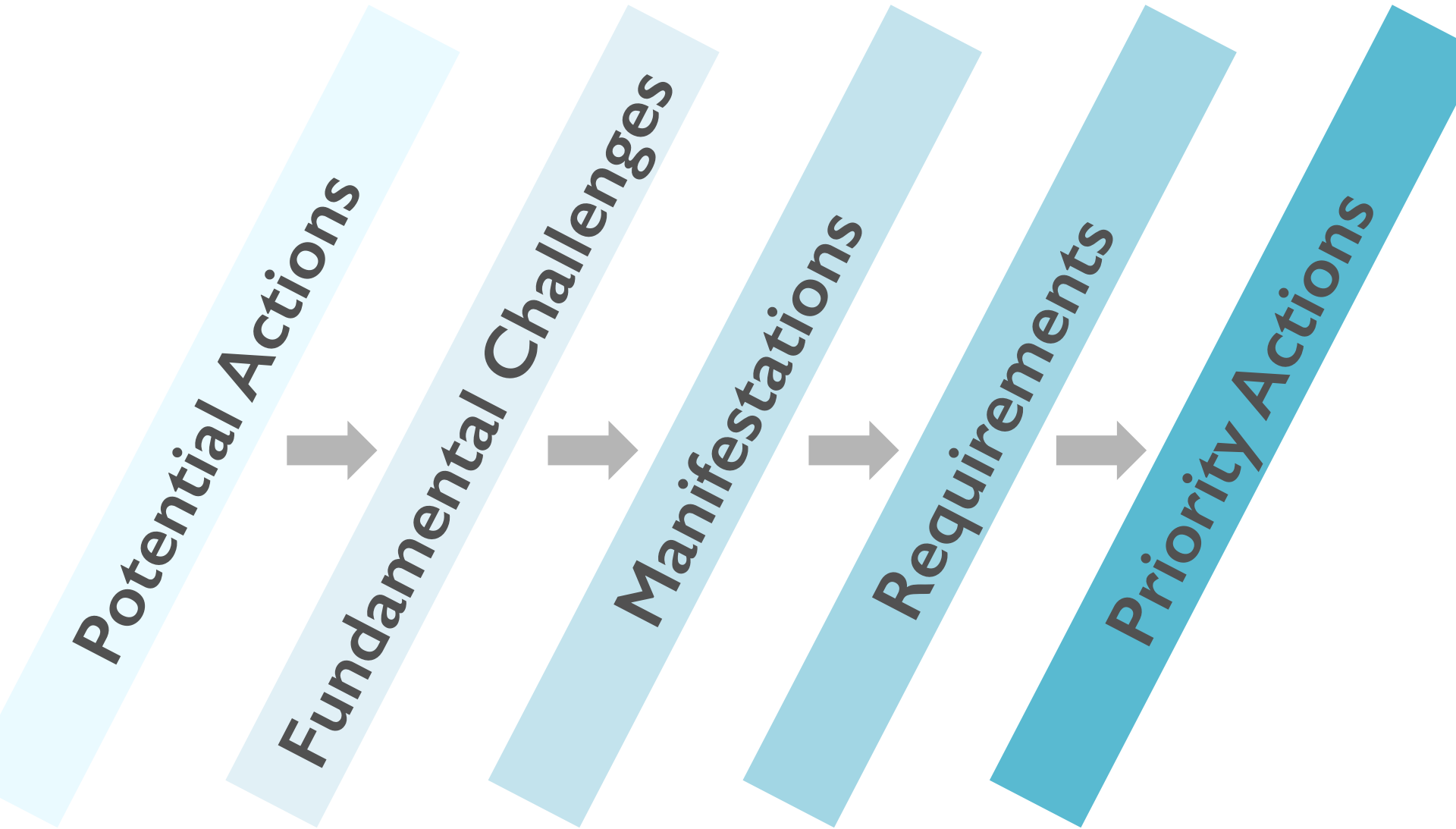


Today's Objectives



Potential Action Ideas

Stormwater Project Inventory. Catalog of existing stormwater work in the Calumet Area, including on-the-ground projects, planning, policy, and funding efforts in the region.

Potential Action Ideas

Stormwater Project Inventory. Catalog of existing stormwater work.

Data & Research Needs. Identify data and research needs in order to support greater strategic investment in leveraging full range of technologies in cost effective way.

Potential Action Ideas

Stormwater Project Inventory. Catalog of existing stormwater work.

Data & Research Needs. Identify data and research needs.

Rainfall Data Update. Act together to work with the Illinois State Water Survey to develop climate change projections for potential future rain patterns.

Potential Action Ideas

Stormwater Project Inventory. Catalog of existing stormwater work.

Data & Research Needs. Identify data and research needs.

Rainfall Data Update. Develop projections for potential future rain patterns.

Land Bank Recommendations. Jointly recommend policies and practices for the Cook County Land Bank and South Suburban Land Bank so as to deploy those land management tools for stormwater management and related green stormwater infrastructure initiatives.

Potential Action Ideas

Stormwater Project Inventory. Catalog of existing stormwater work.

Data & Research Needs. Identify data and research needs.

Rainfall Data Update. Develop projections for potential future rain patterns.

Land Bank Recommendations. Jointly recommend policies and practices.

Stormwater Modeling. Build sewershed and water modeling capacity and information sharing opportunities.

Potential Action Ideas

Stormwater Project Inventory. Catalog of existing stormwater work.

Data & Research Needs. Identify data and research needs.

Rainfall Data Update. Develop projections for potential future rain patterns.

Land Bank Recommendations. Jointly recommend policies and practices.

Stormwater Modeling. Build modeling capacity and information sharing.

Mayoral Compact. Establish a mayoral stormwater compact, akin to the Greenest Region Compact or Clean Air Counts.

Potential Action Ideas

Stormwater Project Inventory. Catalog of existing stormwater work.

Data & Research Needs. Identify data and research needs.

Rainfall Data Update. Develop projections for potential future rain patterns.

Land Bank Recommendations. Jointly recommend policies and practices.

Stormwater Modeling. Build modeling capacity and information sharing.

Mayoral Compact. Establish a mayoral stormwater compact.

Smoke Test & Downspout Disconnections. Build an inter-jurisdictional collaborative effort for large-scale, smoke testing, downspout realignment and rain barrel deployment throughout Municipal Separate Storm Sewer System (MS4) communities.

Potential Action Ideas

Stormwater Project Inventory. Catalog of existing stormwater work.

Data & Research Needs. Identify data and research needs.

Rainfall Data Update. Develop projections for potential future rain patterns.

Land Bank Recommendations. Jointly recommend policies and practices.

Stormwater Modeling. Build modeling capacity and information sharing.

Mayoral Compact. Establish a mayoral stormwater compact.

Smoke Test & Downspout Disconnections. Build a collaborative effort.

Design Guidelines. Standardize and deploy design guidelines on green stormwater infrastructure solutions.

Potential Action Ideas

Stormwater Project Inventory. Catalog of existing stormwater work.

Data & Research Needs. Identify data and research needs.

Rainfall Data Update. Develop projections for potential future rain patterns.

Land Bank Recommendations. Jointly recommend policies and practices.

Stormwater Modeling. Build modeling capacity and information sharing.

Mayoral Compact. Establish a mayoral stormwater compact.

Smoke Test & Downspout Disconnections. Build a collaborative effort.

Design Guidelines. Standardize and deploy design guidelines.

Communications Assessment. Assess effectiveness of existing communications and educational tools.

Potential Action Ideas

Stormwater Project Inventory. Catalog of existing stormwater work.

Data & Research Needs. Identify data and research needs.

Rainfall Data Update. Develop projections for potential future rain patterns.

Land Bank Recommendations. Jointly recommend policies and practices.

Stormwater Modeling. Build modeling capacity and information sharing.

Mayoral Compact. Establish a mayoral stormwater compact.

Smoke Test & Downspout Disconnections. Build a collaborative effort.

Design Guidelines. Standardize and deploy design guidelines.

Communications Assessment. Assess effectiveness of communications.

Installation, Troubleshooting & Maintenance Training. Train volunteers and develop workforce in installations, troubleshooting and maintenance, of green stormwater infrastructure in particular.

Potential Action Ideas

Stormwater Project Inventory

Data & Research Needs

Rainfall Data Update

Land Bank Recommendations

Stormwater Modeling

Mayoral Compact

Smoke Test & Downspout Disconnections

Design Guidelines

Communications Assessment

Installation, Troubleshooting & Maintenance Training

What else?

Project Criteria

Mission Driven	Urgency Driven
Does it address our fundamental challenges?	Is it a foundational step?
Does it require collaboration?	Is there temporal urgency?

Fundamental Challenges

1. Consequences of non-overbank flooding.
2. Consequences of overbank flooding.
3. Drain on public resources from repeated, ineffective, partial interventions.
4. Drain on private resources from repeated, ineffective, partial interventions.
5. Degraded water quality from non-point source pollution.
6. Degraded water quality from point source pollution.
7. Declining infrastructure performance and sufficiency over time.
8. Overconsumption of potable water for non-potable needs.
9. Underutilization of existing assets.

Fundamental Challenges

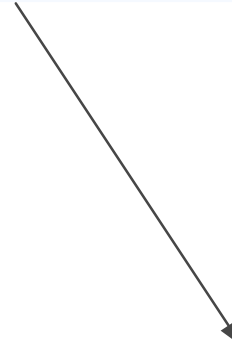
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2. Consequences of overbank flooding.
3. **Drain on public resources from repeated, ineffective, partial interventions.**
4. **Drain on private resources from repeated, ineffective, partial interventions.**
5. Degraded water quality from non-point source pollution.
6. Degraded water quality from point source pollution.
7. **Declining infrastructure performance and sufficiency over time.**
8. Overconsumption of potable water for non-potable needs.
9. Underutilization of existing assets.

Root Causes of Challenge

Declining infrastructure performance and sufficiency over time

Root Causes of Challenge

Insufficient long-term
planning and budgeting for
stormwater investments



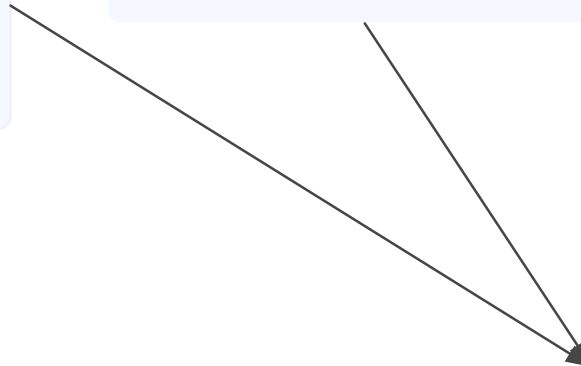
Declining infrastructure
performance and
sufficiency over time

Root Causes of Challenge

More precipitation than we used to have, infrastructure systems not designed for it

Insufficient long-term planning and budgeting for stormwater investments

Declining infrastructure performance and sufficiency over time



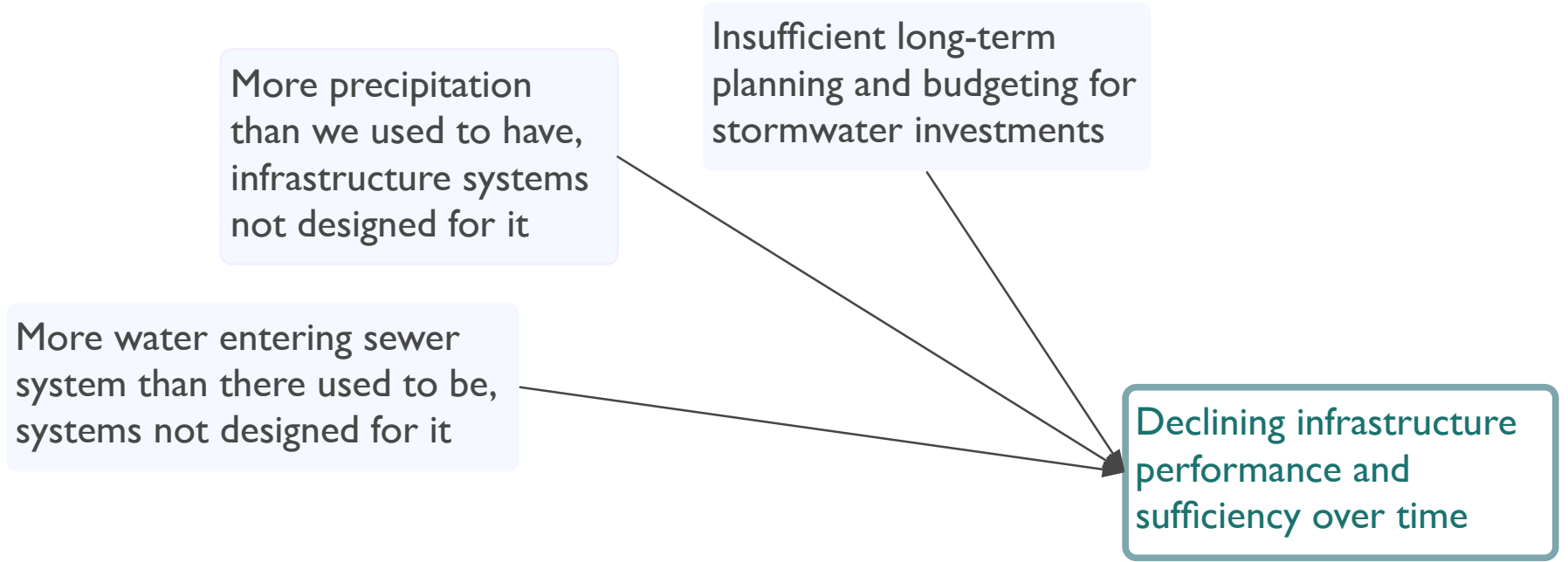
Root Causes of Challenge

More precipitation than we used to have, infrastructure systems not designed for it

Insufficient long-term planning and budgeting for stormwater investments

More water entering sewer system than there used to be, systems not designed for it

Declining infrastructure performance and sufficiency over time



Root Causes of Challenge

More precipitation than we used to have, infrastructure systems not designed for it

Insufficient long-term planning and budgeting for stormwater investments

More water entering sewer system than there used to be, systems not designed for it

Insufficient maintenance funding over time in many communities has led to considerable backlog that exceeds current willingness to pay

Declining infrastructure performance and sufficiency over time

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graph LR; A[More precipitation than we used to have, infrastructure systems not designed for it] --> D[Declining infrastructure performance and sufficiency over time]; B[Insufficient long-term planning and budgeting for stormwater investments] --> D; C[More water entering sewer system than there used to be, systems not designed for it] --> D; E[Insufficient maintenance funding over time in many communities has led to considerable backlog that exceeds current willingness to pay] --> D;
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Root Causes of Challenge

More precipitation than we used to have, infrastructure systems not designed for it

Insufficient long-term planning and budgeting for stormwater investments

More water entering sewer system than there used to be, systems not designed for it

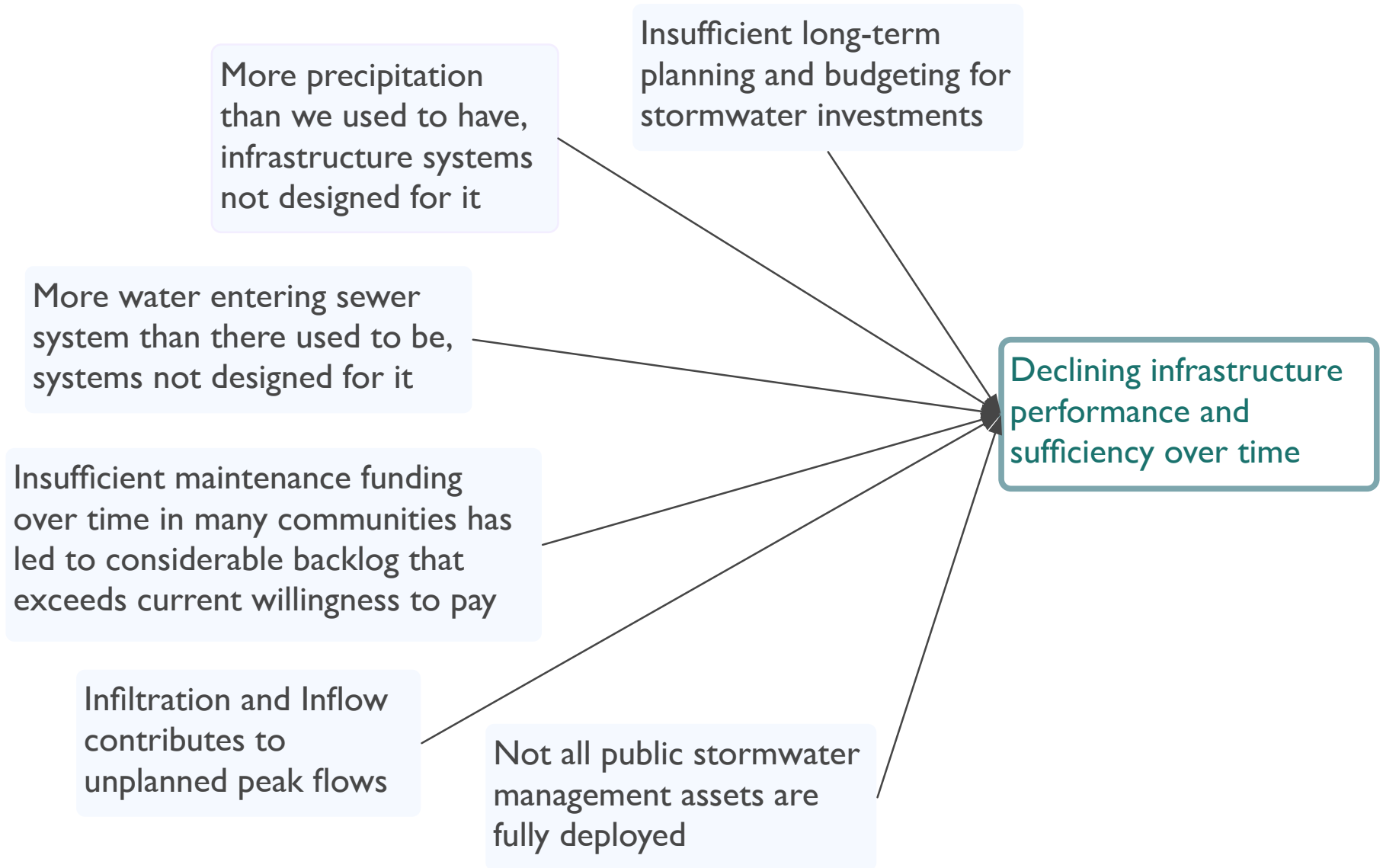
Insufficient maintenance funding over time in many communities has led to considerable backlog that exceeds current willingness to pay

Infiltration and Inflow contributes to unplanned peak flows

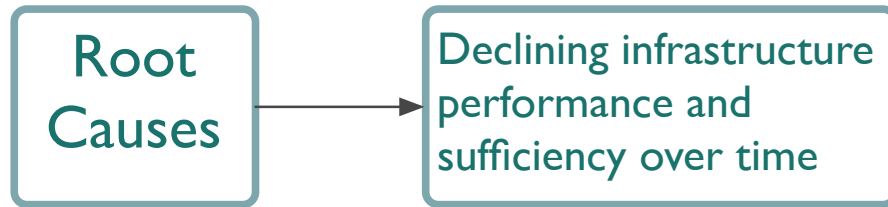
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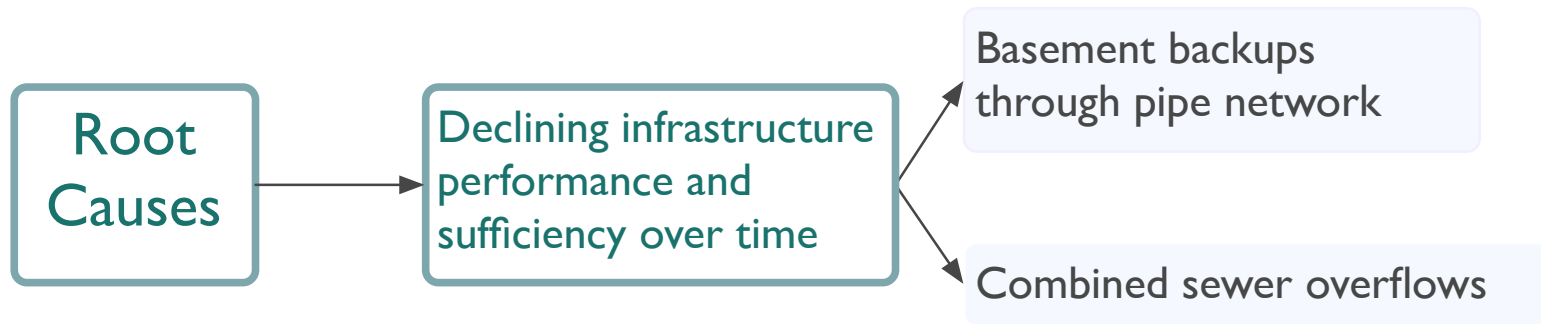
Root Causes of Challenge



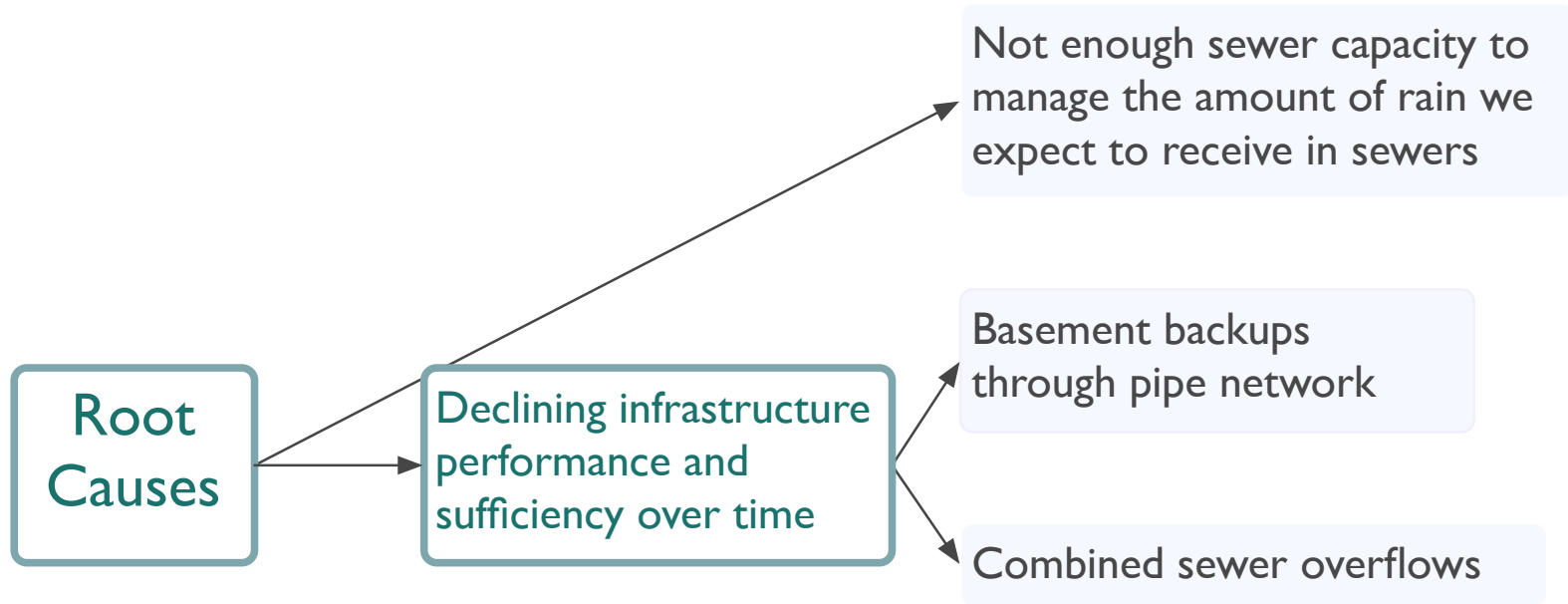
Manifestations of Challenge & Root Causes



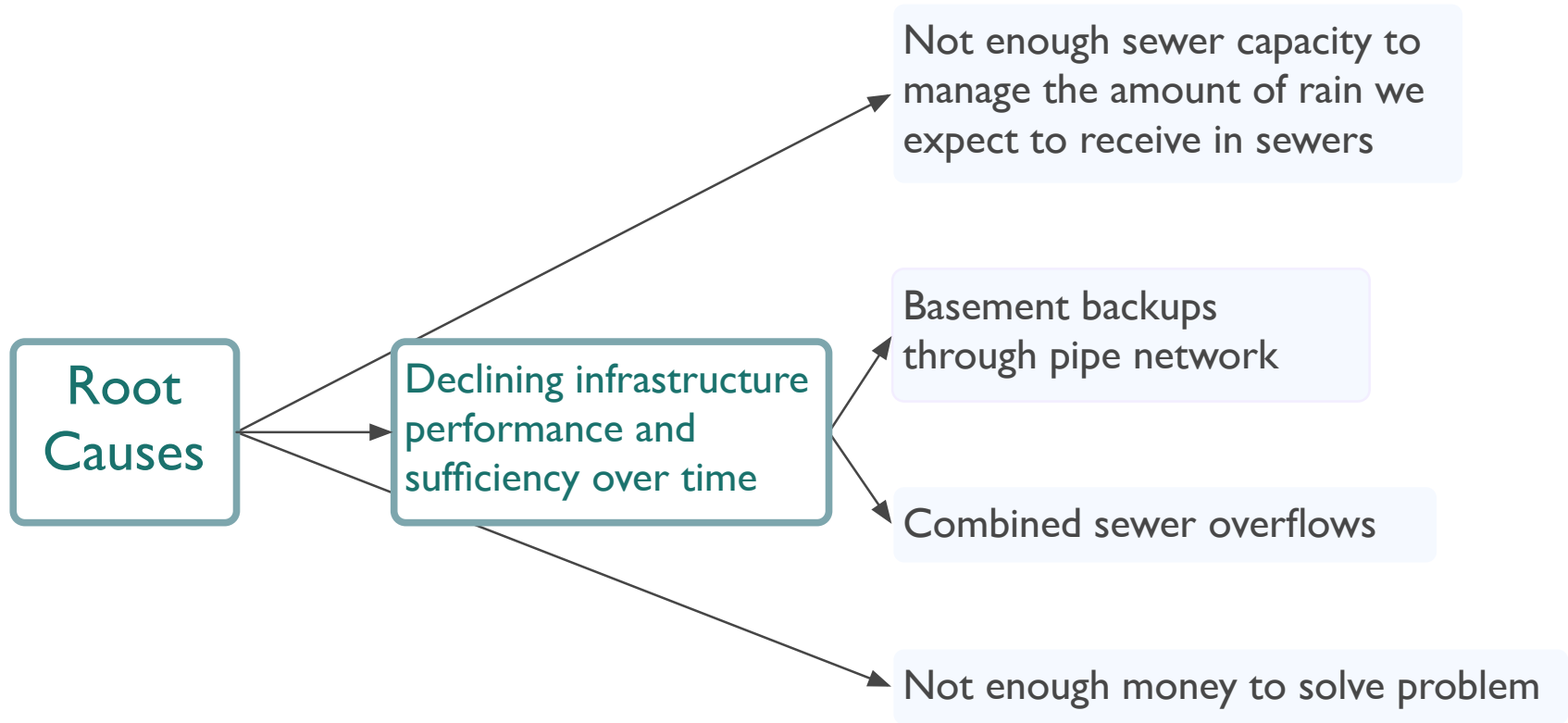
Manifestations of Challenge & Root Causes



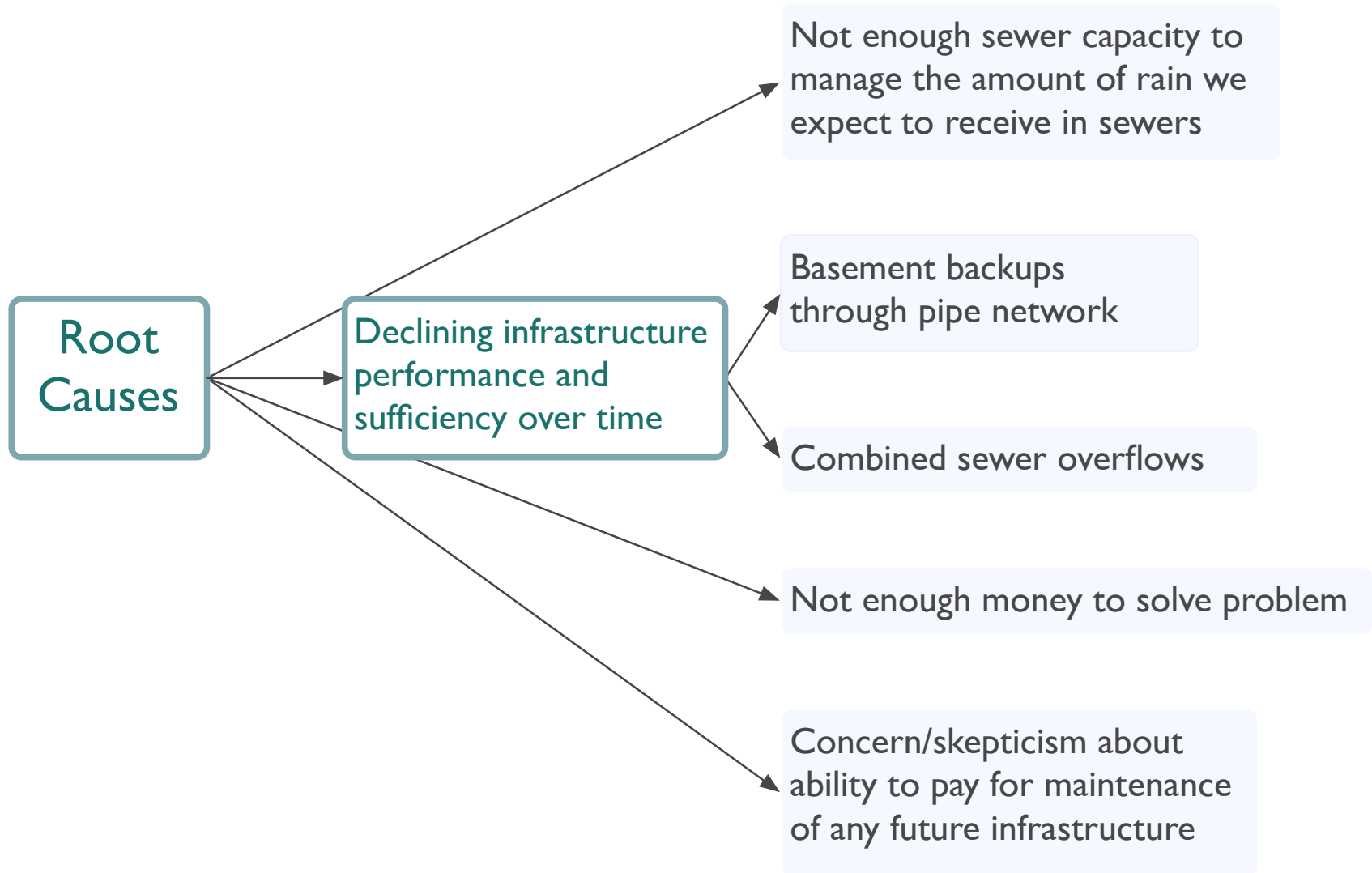
Manifestations of Challenge & Root Causes



Manifestations of Challenge & Root Causes



Manifestations of Challenge & Root Causes



What Does Optimized Look Like?

Not enough sewer capacity to manage the amount of rain we expect to receive in sewers

Basement backups through pipe network

Not enough money to solve problem



Combined sewer overflows

Concern/skepticism about ability to pay for maintenance of any future infrastructure

What Does Optimized Look Like?

Not enough sewer capacity to manage the amount of rain we expect to receive in sewers

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Gap between expected precipitation and expected capacity is eliminated

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Gap between expected precipitation and expected capacity is eliminated

Infiltration and Inflow contributes less to precipitation/capacity gap

Available funding sources are sufficient to address backlog of maintenance and capital improvements

Long-term planning for capital improvements increases

How We Might Measure Success?

Amount of water we expect to enter sewer is reduced

Storage and conveyance capacity restored/ added to system

Peak wet weather flows are reduced

Risk of basement backups is reduced

Number of basement backups is reduced

Funding is increased to match investment needs

Number of communities with stormwater-inclusive capital improvement plans increases

How We Might Measure Success?

Requirements for Success?

Amount of water we expect to enter sewer is reduced

Need to know how much precipitation to expect

Storage and conveyance capacity restored/ added to system

Need to know how much current capacity we have

Peak wet weather flows are reduced

Need to know ratio of current performance vs. designed performance, and how it is changing over time

Risk of basement backups is reduced

Need to know current risk of basement backups, CSOs, other issues on actionable scale

Number of basement backups is reduced

Need to know current number of basement backups

Funding is increased to match investment needs

Political will to generate and deploy sufficient funding

Number of communities with stormwater-inclusive capital improvement plans increases

Understanding of need for maintenance of future infrastructure

Requirements for Success?

Need to know how much precipitation to expect

Need to know how much current capacity we have

Need to know ratio of current performance vs. designed performance, and how it is changing over time

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Political will to generate and deploy sufficient funding

Understanding of need for maintenance of future infrastructure

Rainfall Data

Stormwater Modeling

Mayoral Compact

Design Guidelines

Smoke Testing

Data & Research

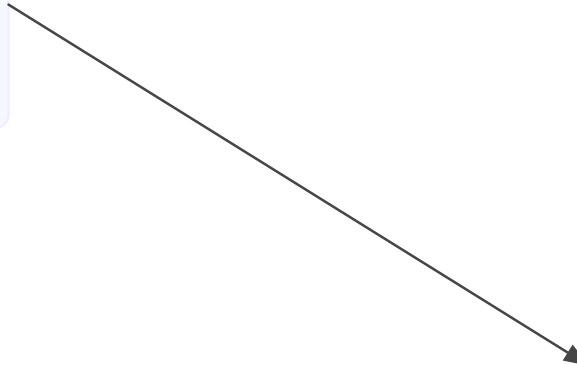
Root Causes of Challenge

Consequences of
non-overbank
flooding

Root Causes of Challenge

More precipitation than we used to have, infrastructure systems not designed for it

Consequences of non-overbank flooding



Root Causes of Challenge

More precipitation than we used to have, infrastructure systems not designed for it

More water entering sewer system than there used to be, systems not designed for it

Consequences of non-overbank flooding

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graph LR; A[More precipitation than we used to have, infrastructure systems not designed for it] --> C[Consequences of non-overbank flooding]; B[More water entering sewer system than there used to be, systems not designed for it] --> C;
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Root Causes of Challenge

More precipitation than we used to have, infrastructure systems not designed for it

More water entering sewer system than there used to be, systems not designed for it

Substantial variation in property-to-property conditions, preparedness, knowledge and financial werewithal

Consequences of non-overbank flooding

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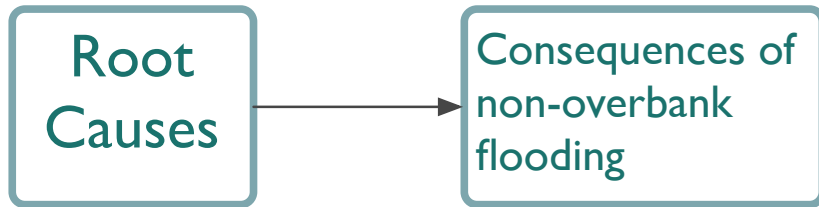
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Not all solutions can be affected by public entity

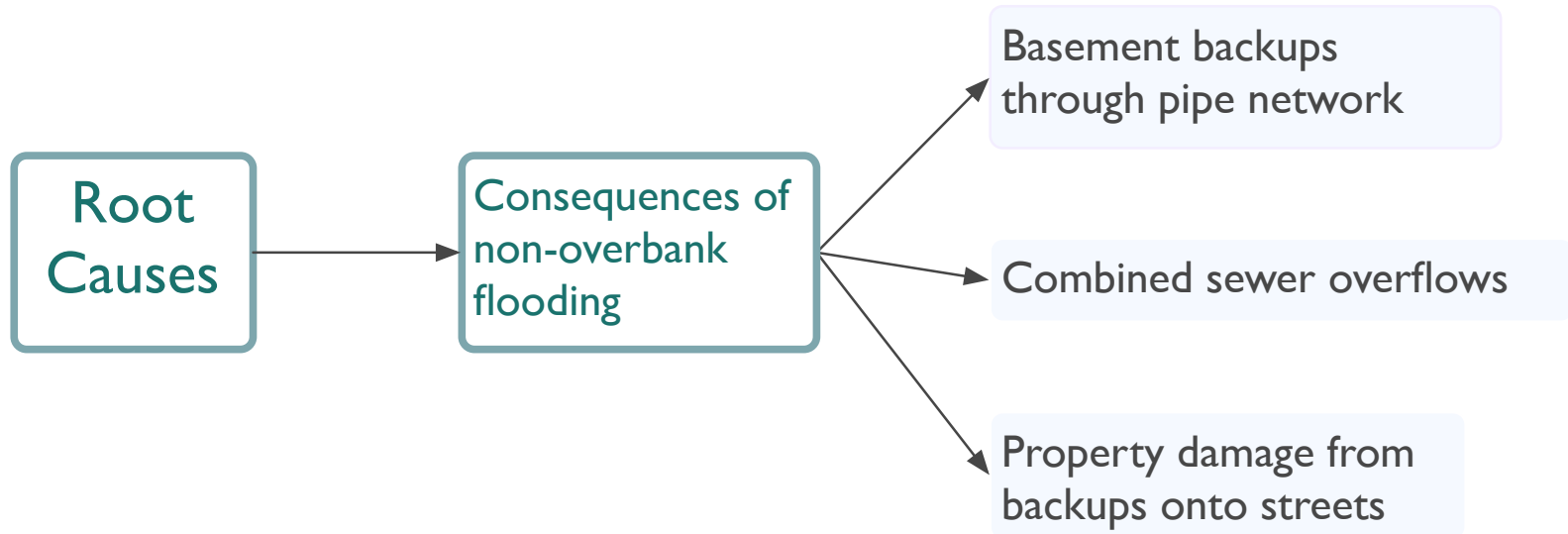
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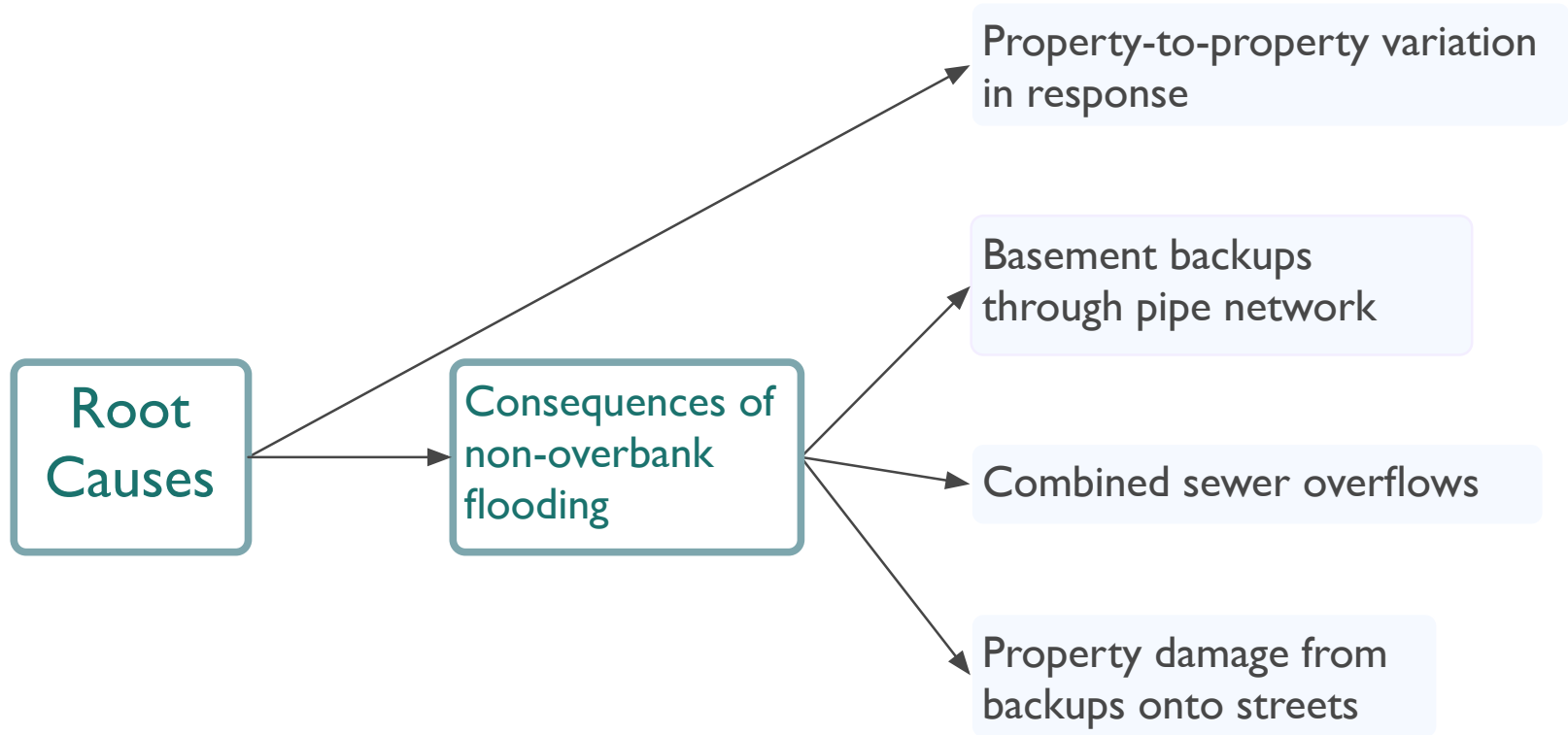
Manifestations of Challenge & Root Causes



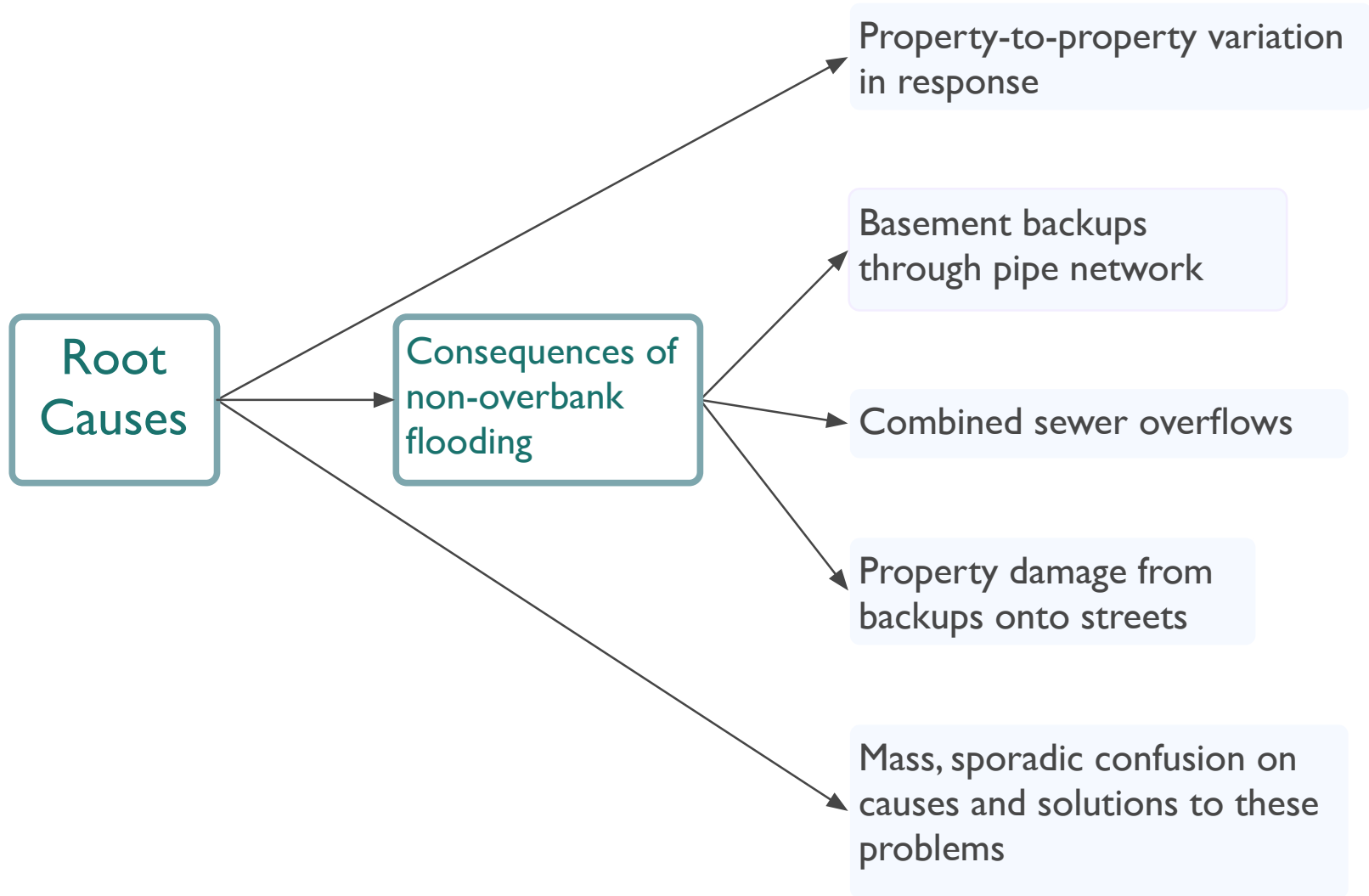
Manifestations of Challenge & Root Causes



Manifestations of Challenge & Root Causes



Manifestations of Challenge & Root Causes



What Does Optimized Look Like?

Property-to-property
variation in response

Basement backups through
pipe network

Combined sewer overflows

Property damage from
backups onto streets

Mass, sporadic confusion on
causes and solutions to these
problems



What Does Optimized Look Like?

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Gap between expected precipitation
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Messages about causes and solutions
are consistent, shared, deployed and
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Gap between expected precipitation
and expected capacity is eliminated

Messages about causes and solutions
are consistent, shared, deployed and
acted on

Ability for targeted property-by-
property investments as appropriate

How We Might Measure Success?

Risk of basement backups is reduced

Number of basement backups is reduced

Number of partners using shared messaging materials, and audience reached

How We Might Measure Success?

Requirements for Success?

Risk of basement backups is reduced

Need to know current risk of basement backups, CSOs, other issues on actionable scale

Number of basement backups is reduced

Need to know current number of basement backups

Number of partners using shared messaging materials, and audience reached

Will to use shared messaging

Need private property owners to do something effective and sustained

Requirements for Success?

Need to know current risk of basement backups, CSOs, other issues on actionable scale

Need to know current number of basement backups

Will to use shared messaging

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Rainfall Data

Smoke Testing

Mayoral Compact

Data & Research

Design Guidelines

Comms Assessment

Root Causes of Challenge

Drain on public and private resources from repeated, ineffective, partial interventions

Root Causes of Challenge

Insufficient long-term
planning and budgeting for
stormwater investments

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graph TD; A[Insufficient long-term planning and budgeting for stormwater investments] --> B[Drain on public and private resources from repeated, ineffective, partial interventions]
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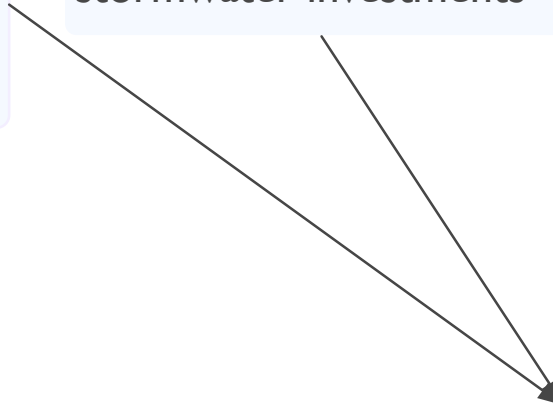
Drain on public and
private resources from
repeated, ineffective,
partial interventions

Root Causes of Challenge

Inconsistent priorities between funders, between implementers, and between funders and implementers

Insufficient long-term planning and budgeting for stormwater investments

Drain on public and private resources from repeated, ineffective, partial interventions



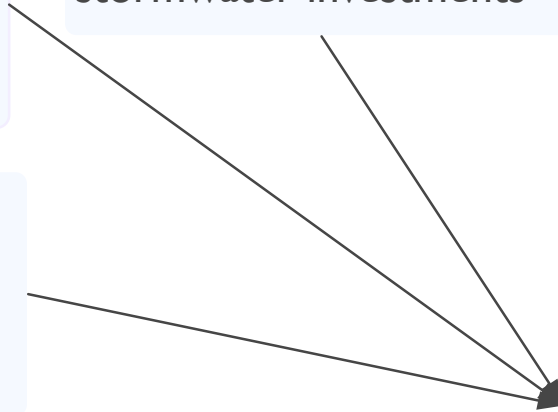
Root Causes of Challenge

Inconsistent priorities between funders, between implementers, and between funders and implementers

Stormwater problems appear to be worsening; public consciousness of stormwater problems appears to be growing

Insufficient long-term planning and budgeting for stormwater investments

Drain on public and private resources from repeated, ineffective, partial interventions



Root Causes of Challenge

Inconsistent priorities between funders, between implementers, and between funders and implementers

Insufficient long-term planning and budgeting for stormwater investments

Stormwater problems appear to be worsening; public consciousness of stormwater problems appears to be growing

Insufficient maintenance funding over time in many communities has led to considerable backlog that exceeds current willingness to pay

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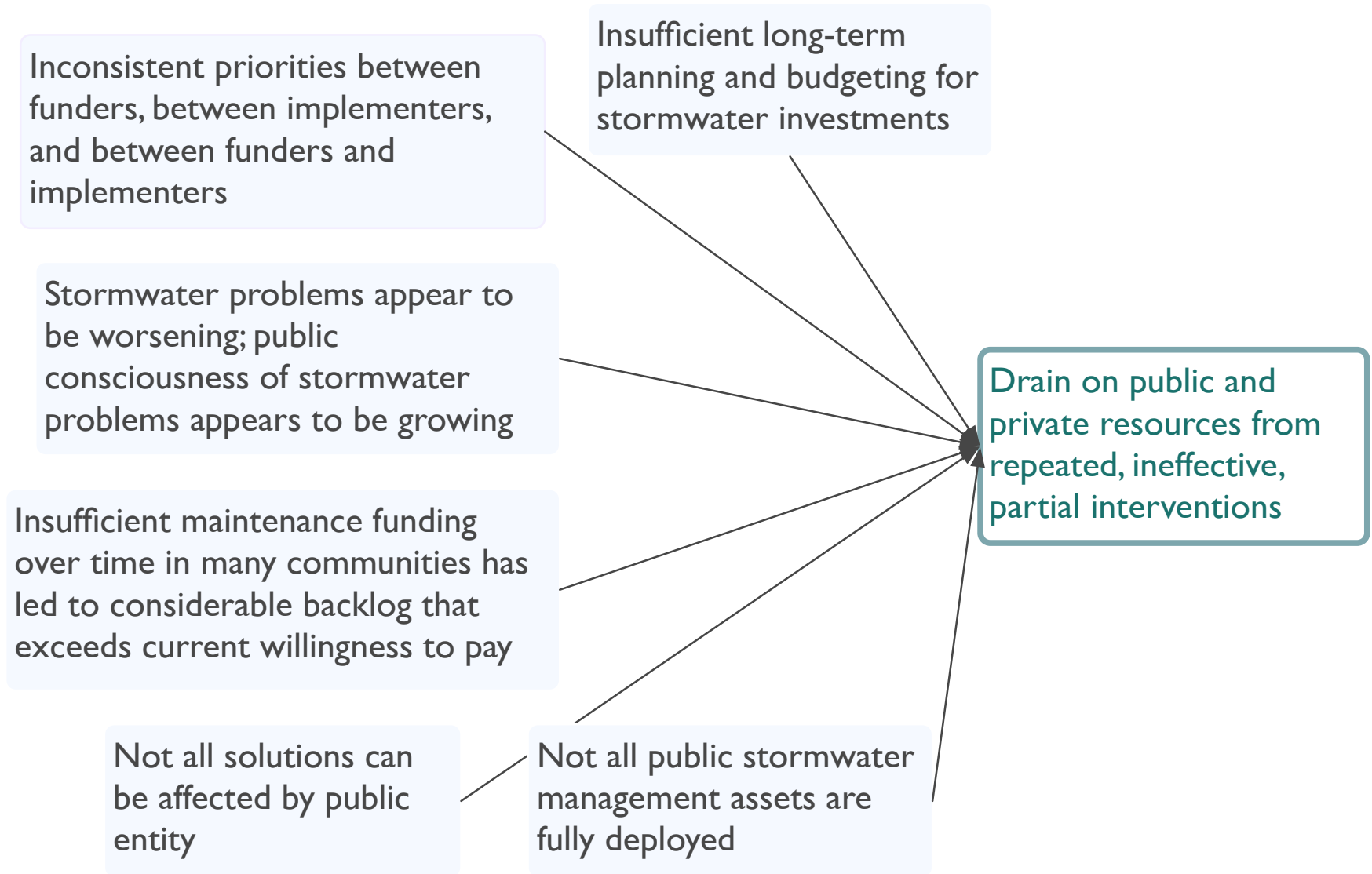
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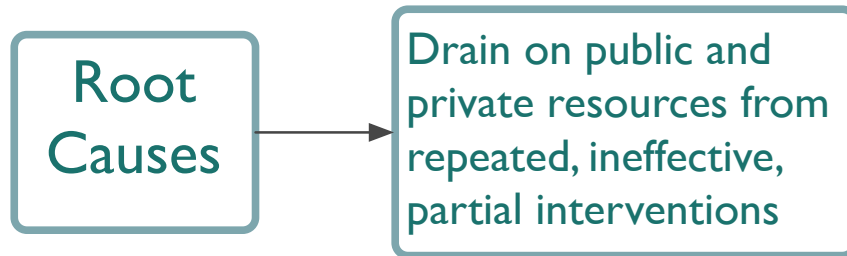
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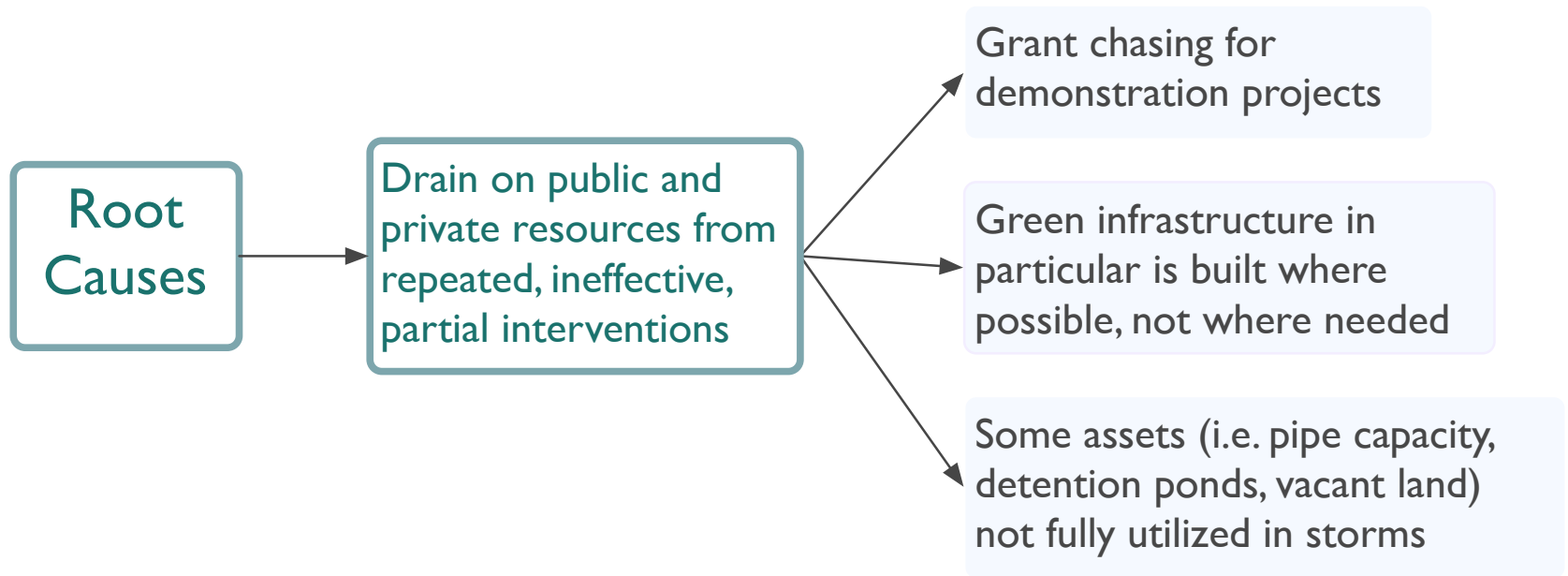
Root Causes of Challenge



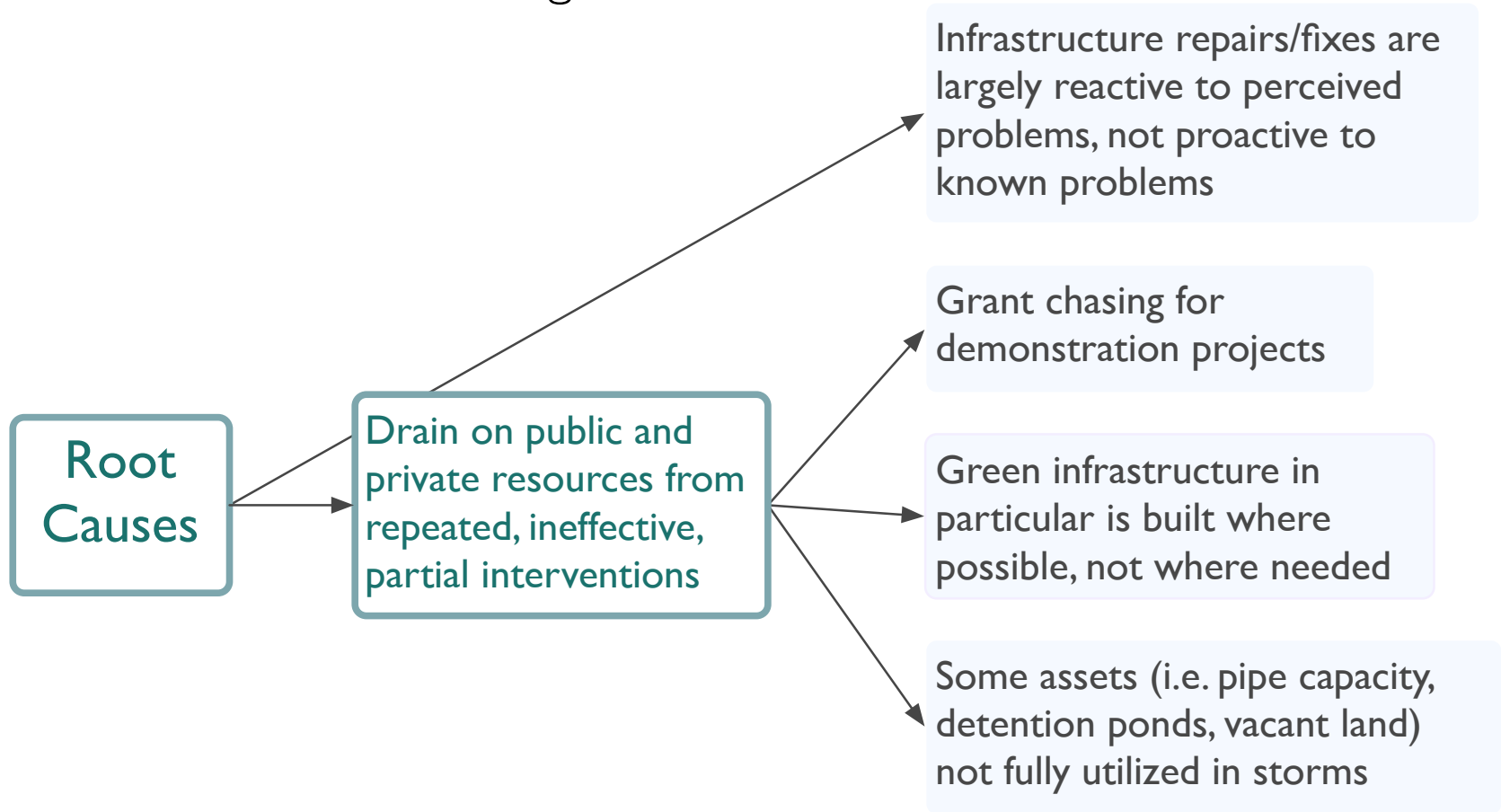
Manifestations of Challenge & Root Causes



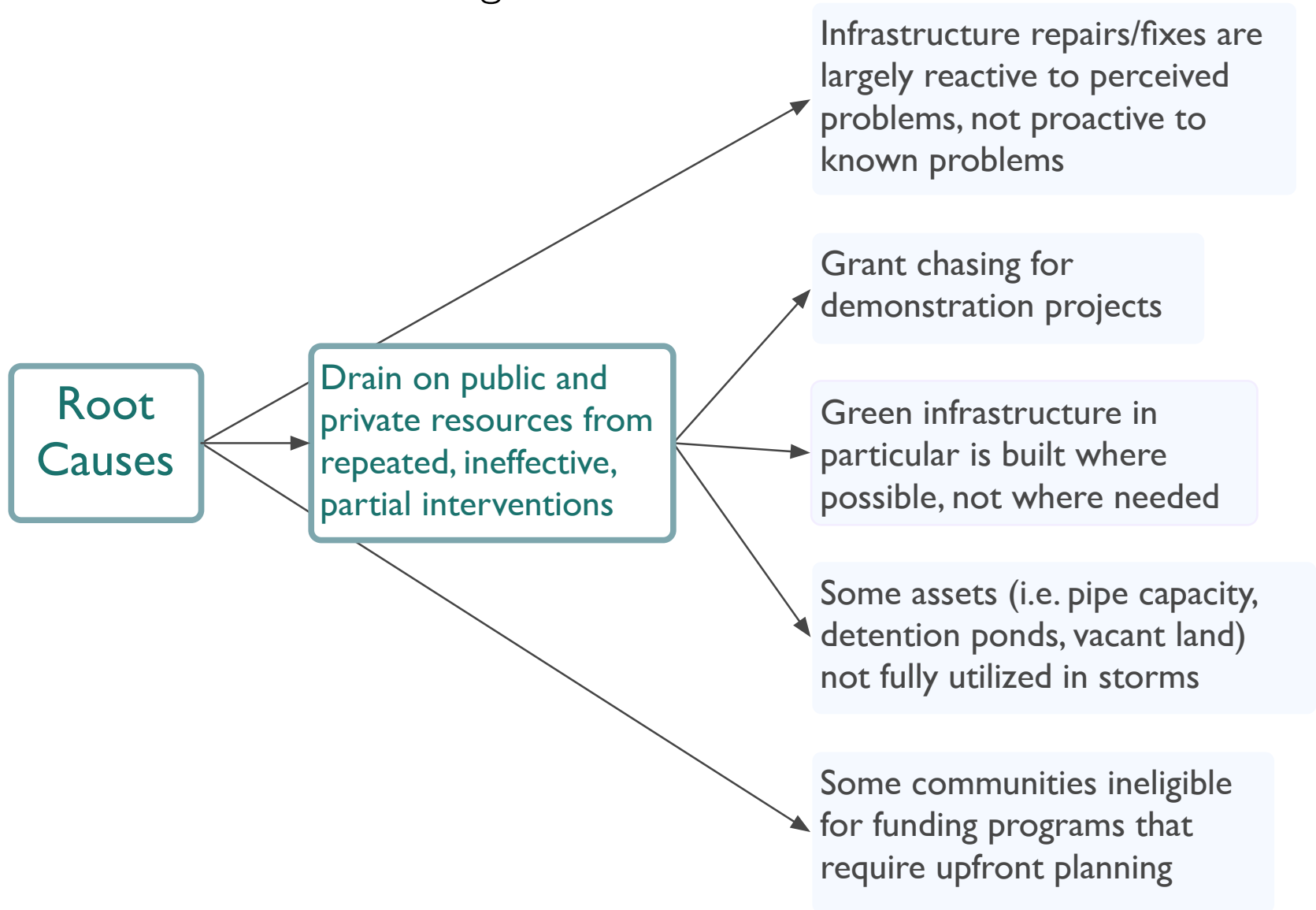
Manifestations of Challenge & Root Causes



Manifestations of Challenge & Root Causes



Manifestations of Challenge & Root Causes



What Does Optimized Look Like?

Infrastructure repairs/fixes are largely reactive to perceived problems, not proactive to known problems

Grant chasing for demonstration projects

Green infrastructure in particular is built where possible, not where needed

Some assets (i.e. pipe capacity, detention ponds, vacant land) not fully utilized in storms

Some communities ineligible for funding programs that require upfront planning



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Long-term planning for capital improvements increases

Watershed/sewershed planning occurs to optimize future investments

Maximum stormwater value is derived from existing assets

Clear, established priorities for funders and implementers

How We Might Measure Success?

Number of communities with stormwater-inclusive capital improvement plans increases

Section 319 planning

Gray and green infrastructure is funded through means other than grants

Priorities are embedded in funding parameters

How We Might Measure Success?

Requirements for Success?

Number of communities with stormwater-inclusive capital improvement plans increases

Need to know status of capital improvement planning

Section 319 planning

Need to know capacity of underutilized assets

Gray and green infrastructure is funded through means other than grants

Need will to plan and implement plans

Priorities are embedded in funding parameters

Need to increase capacity for planning

Requirements for Success?

Need to know status of capital improvement planning

Need to know capacity of underutilized assets

Need will to plan and implement plans

Need to increase capacity for planning

Requirements for Success?

Need to know status of capital improvement planning

Project Inventory

Need to know capacity of underutilized assets

Stormwater Modeling

Will to plan and implement plans

Data & Research

Need to increase capacity for planning

Mayoral Compact

Land Bank Guidelines

Priority Action Ideas?

Stormwater Project Inventory

Data & Research Needs

Rainfall Data Update

Land Bank Recommendations

Stormwater Modeling

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Smoke Test & Downspout Disconnections

Design Guidelines

Communications Assessment

Installation, Troubleshooting & Maintenance Training

What else?