

Urban Wood Utilization for a Healthy Community

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VirginiaTech

**College of Natural Resources
and Environment**



Presentation Overview

- **SCOPE and AIM**
 - features and benefits of utilization
 - recent research findings
- **BACKGROUND**
 - how utilization is practiced
 - why utilization matters
- **RESEARCH**
 - utilization practices
 - utilization perceptions
- **LOOK AHEAD**
 - hypotheses to be tested
 - capabilities to be developed
- **SUMMARY**
 - your questions
 - your comments



Source: <http://www.greenwasterecyclingyard.com>

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Community Forestry Areas

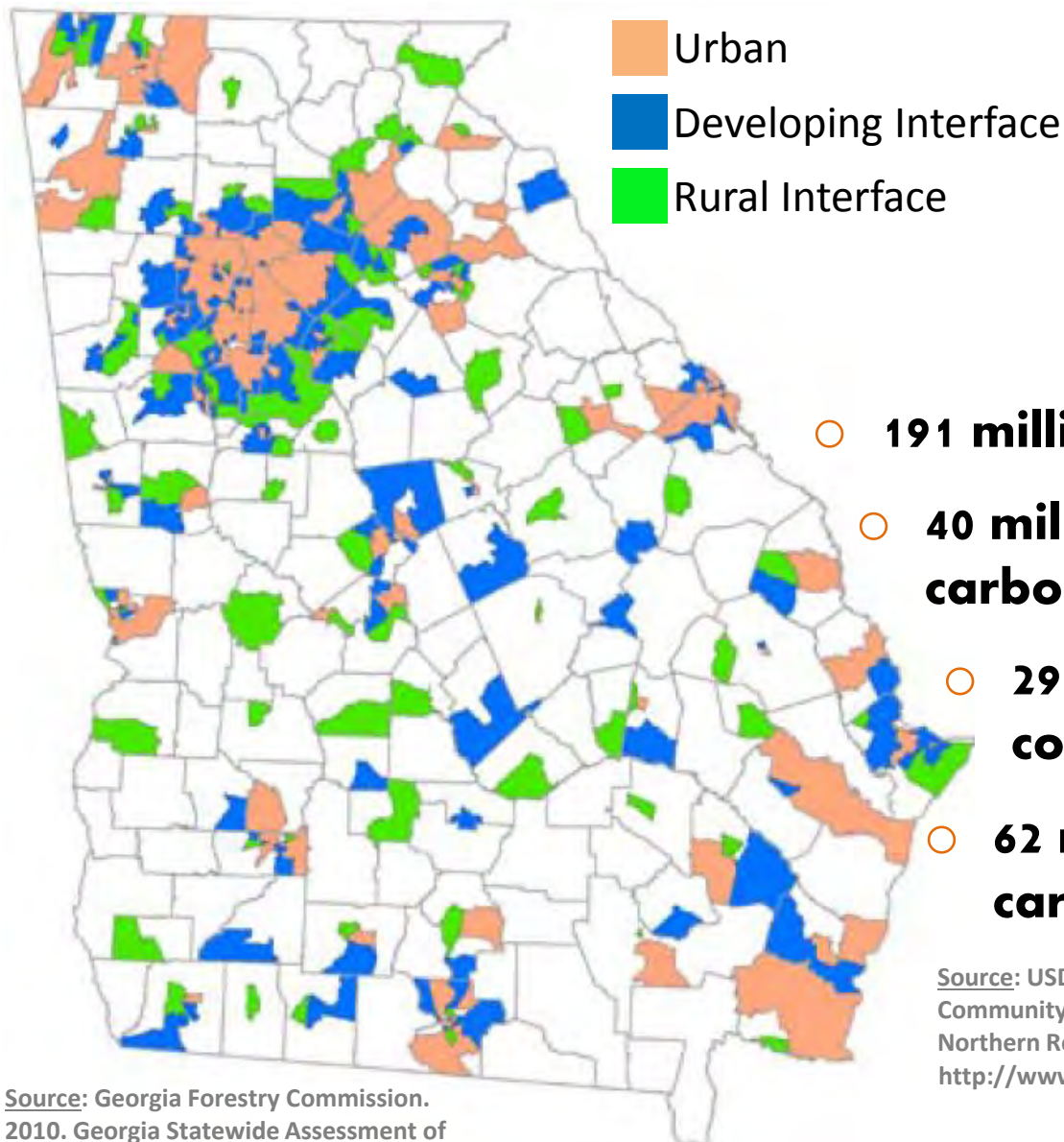
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- **191 million urban trees**
- **40 million tons stored carbon**
- **293 million urban or community trees**
- **62 million tons stored carbon**

Source: USDA Forest Service. 2009. Urban and Community Forests of the Southern Atlantic Region. Northern Research Station. GTR NRS-50. http://www.nrs.fs.fed.us/pubs/gtr/gtr_nrs50.pdf

Source: Georgia Forestry Commission. 2010. Georgia Statewide Assessment of Forest Resources. <http://www.gatrees.org/about-us/strategic-plan/GAStateAssessment-6-17-10.pdf>

Conceptual Framework

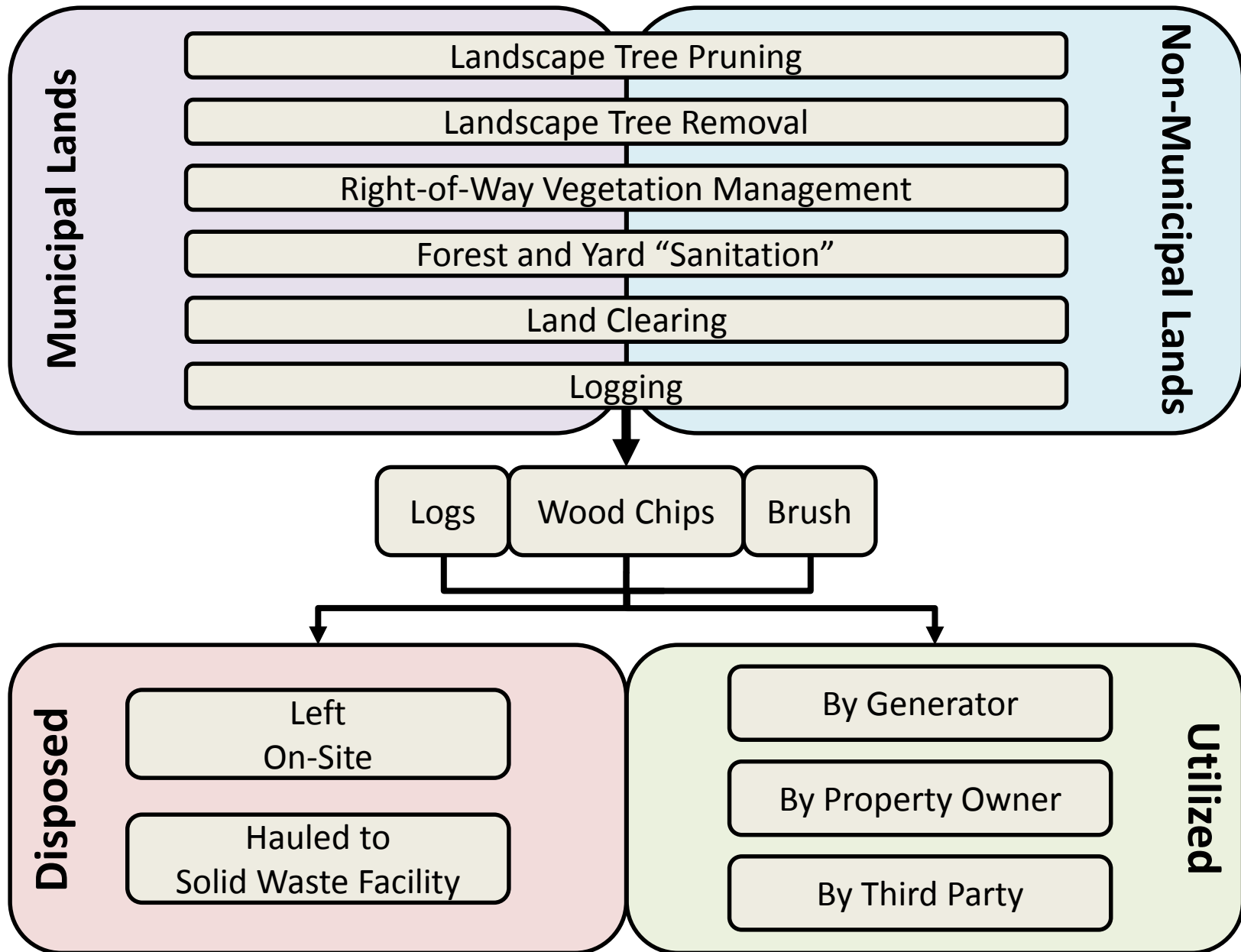
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Conceptual Framework

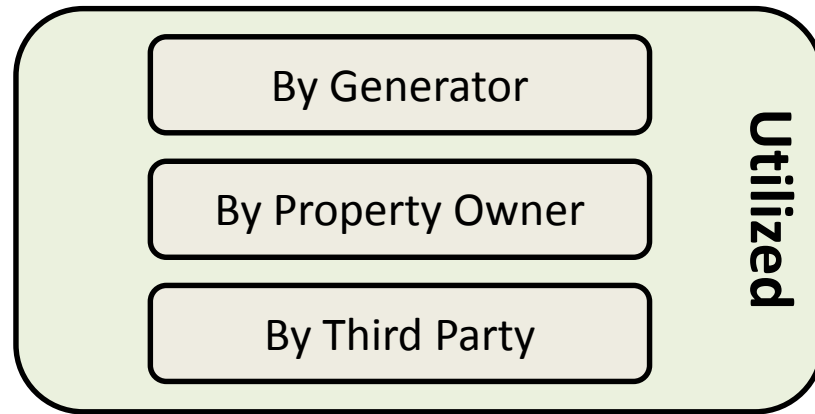
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Conceptual Framework

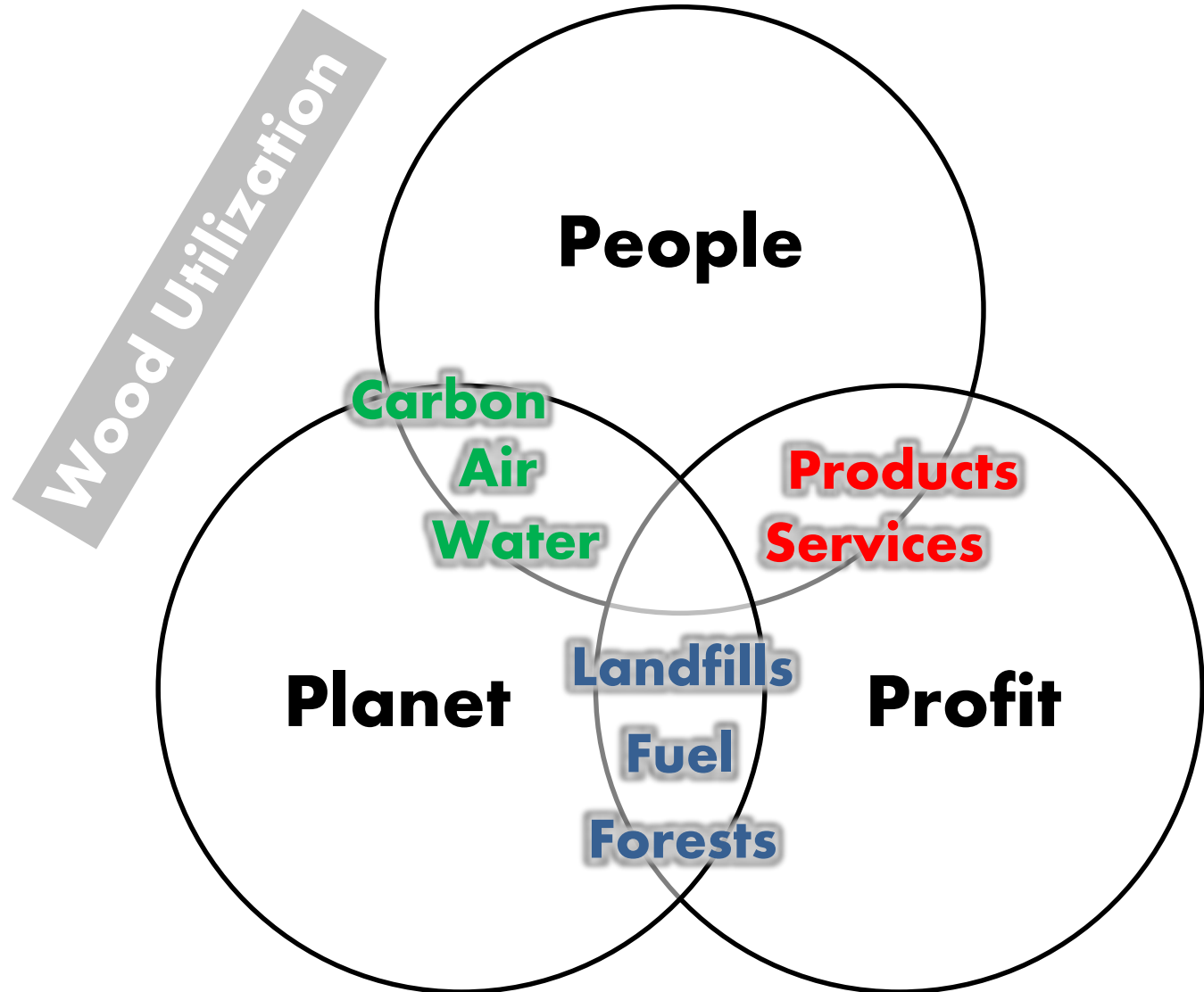
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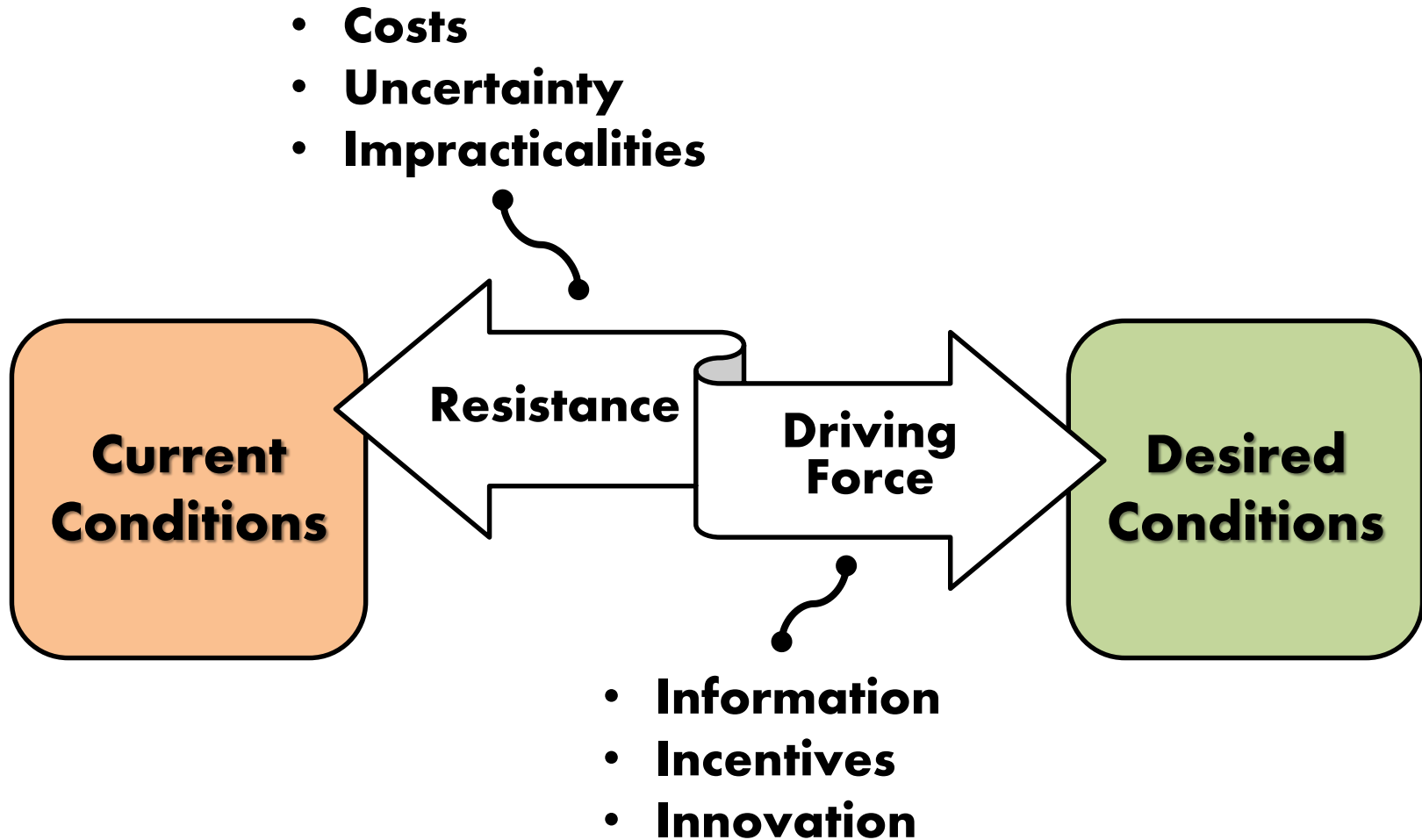
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Research Questions

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- **Where does urban forest waste (UFW) come from?**
- **Where does urban forest waste (UFW) end up?**
- **What urban forest products (UFPs) are made from urban forest waste (UFW)?**
- **What do the people involved with the generation and utilization of UFW think about it?**



Source: <http://www.greenwasterecyclingyard.com>

Research Methods

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- **Tree Care Companies**
- **Landscape Companies**
- **Institutions and NGOs**
- **Utility & DOT Contractors**



- **Municipal Arborists**
- **Municipal Foresters**
- **Public Works Administrators**
- **Solid Waste Administrators**

Research Methods

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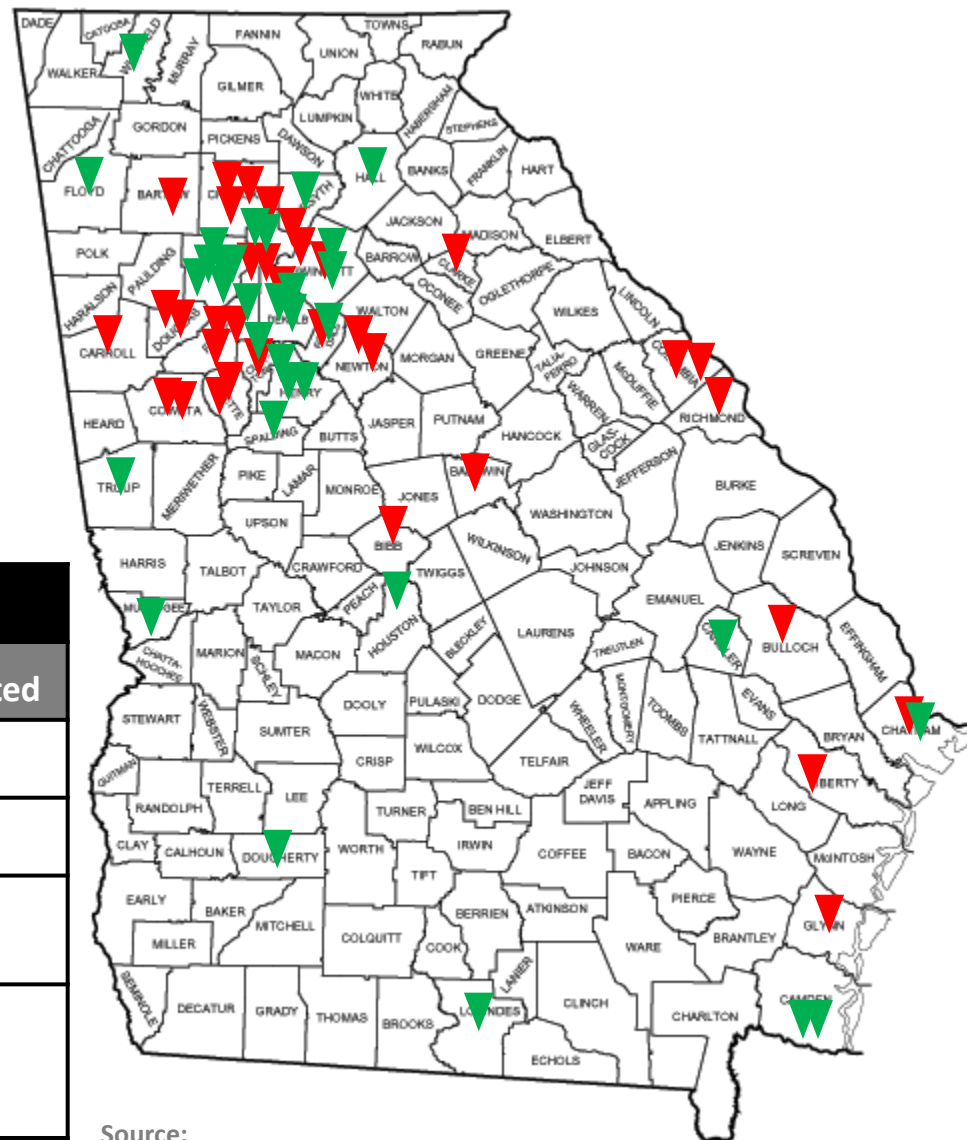
RESEARCH

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	Invited	601
	Responded	179
	Response Rate	30%

MUNICIPALITIES			
	City	County	Consolidated
Invited	48	16	4
Responded	28	5	1
Response Rate	58%	31%	25%
Overall Response Rate			50%



Source:

<http://www.officialusa.com/stateguides/georgia/maps/counties.html>

Urban Forest Waste Practices

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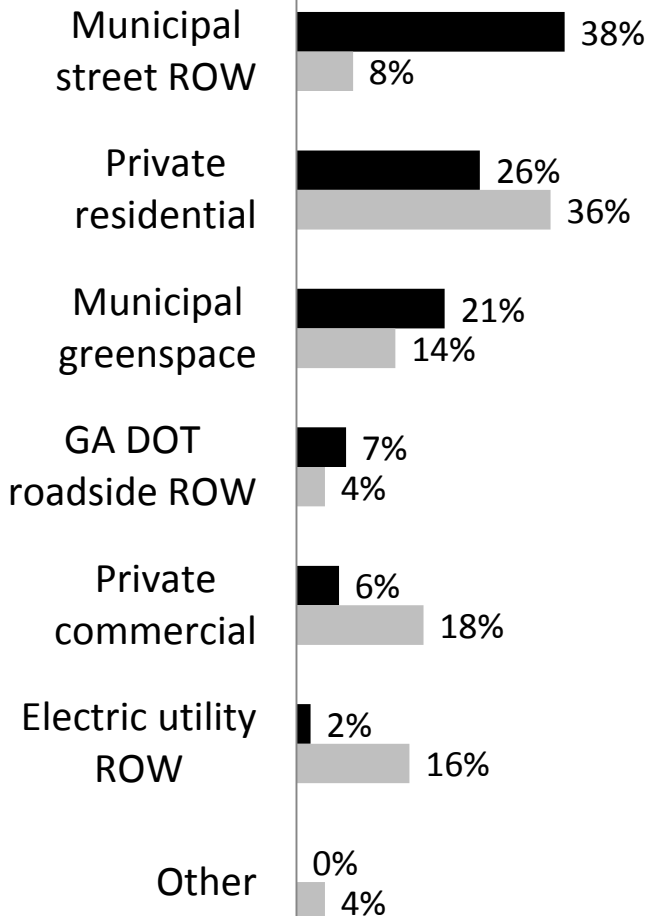
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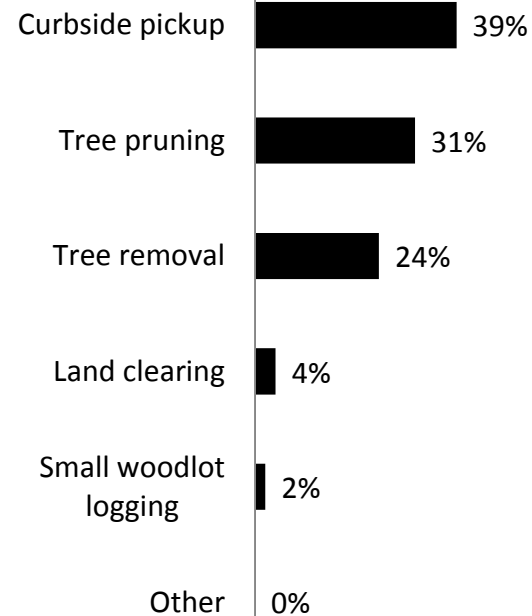
SUMMARY

Land Origin of UFW

■ Municipal Operations
■ Private Arborist Operations



Source of UFW



Urban Forest Waste Practices

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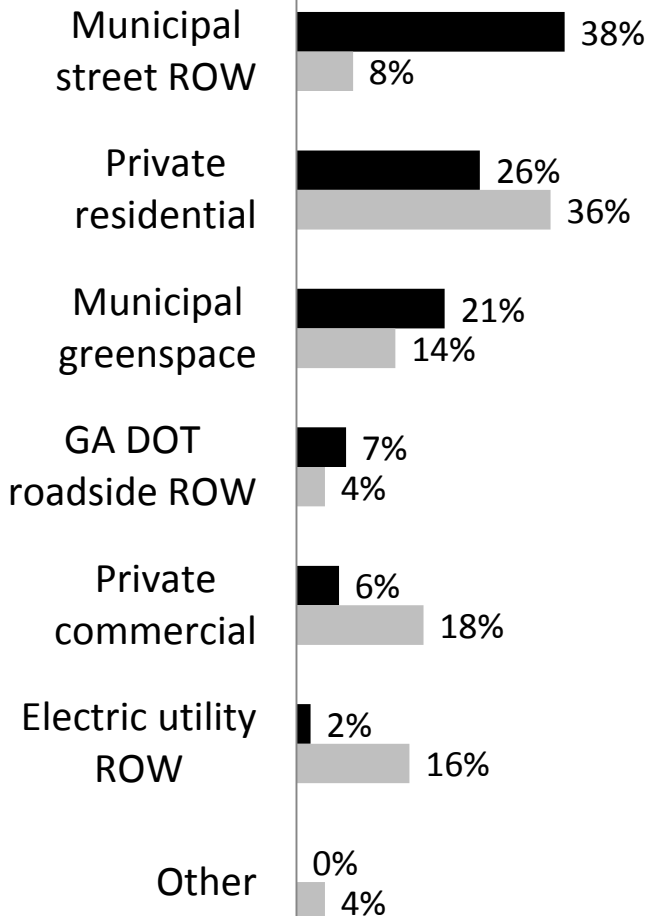
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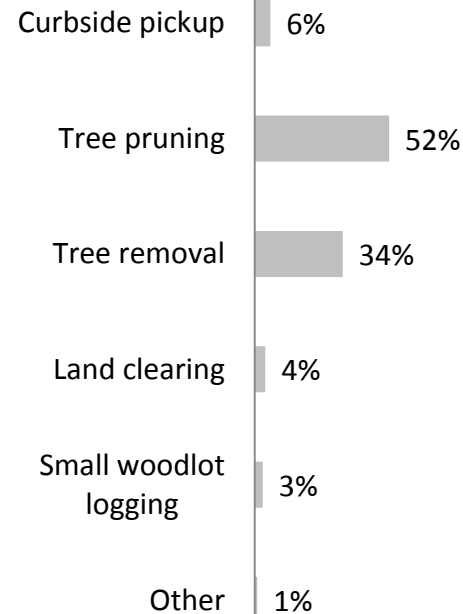
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Source of UFW



Urban Forest Waste Practices

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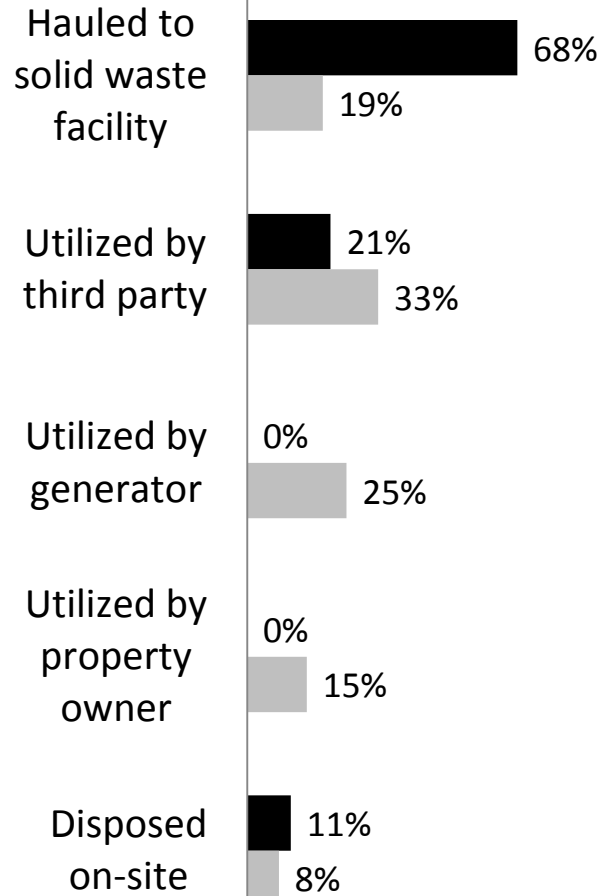
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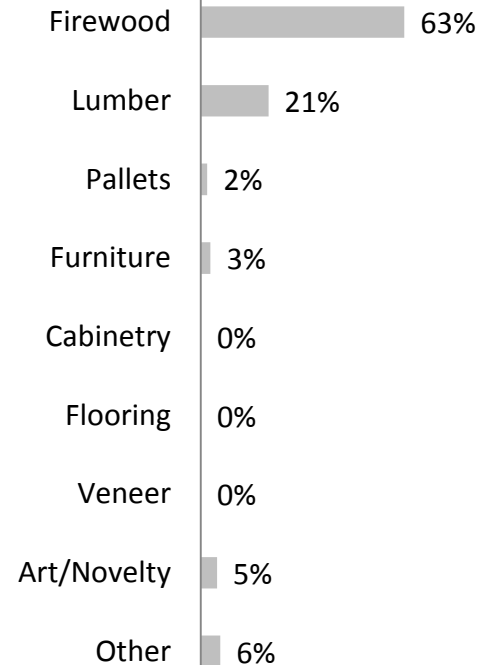
SUMMARY

Fate of Logs

■ Municipal Operations
■ Private Arborist Operations



Generator UFPs



Urban Forest Waste Practices

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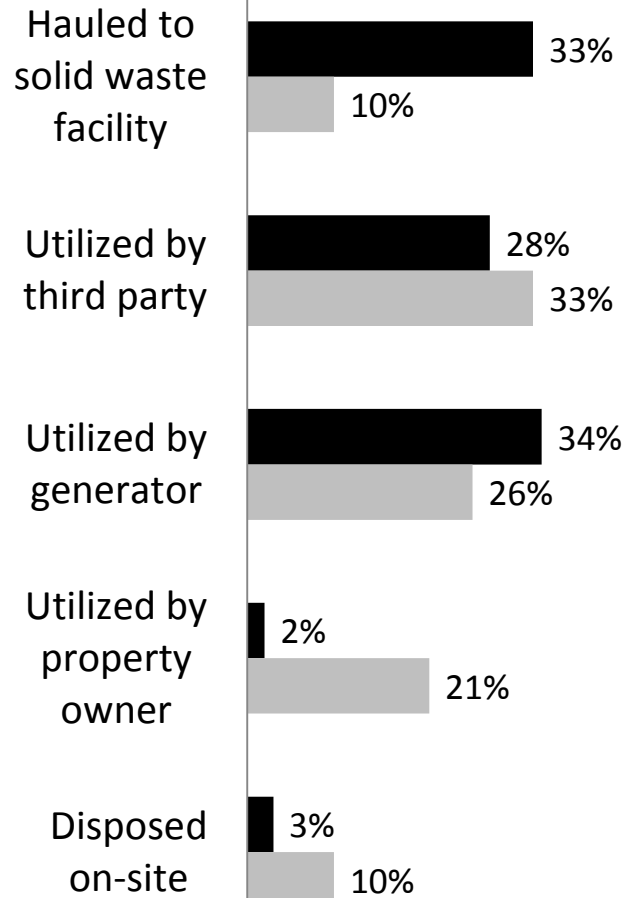
RESEARCH

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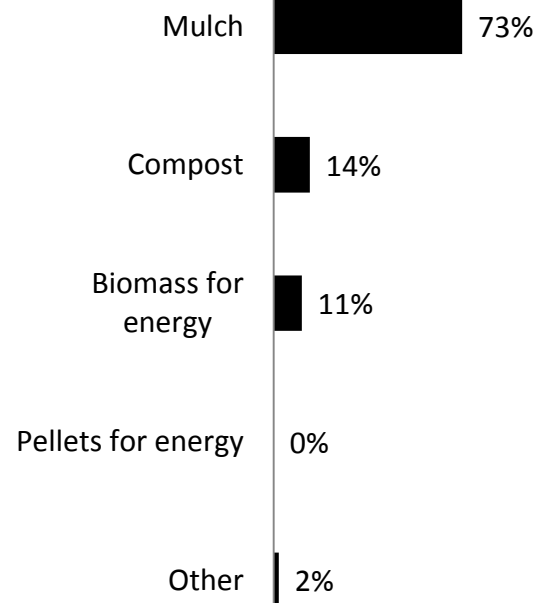
SUMMARY

Fate of Wood Chips

■ Municipal Operations
■ Private Arborist Operations



Generator UFPs



Urban Forest Waste Practices

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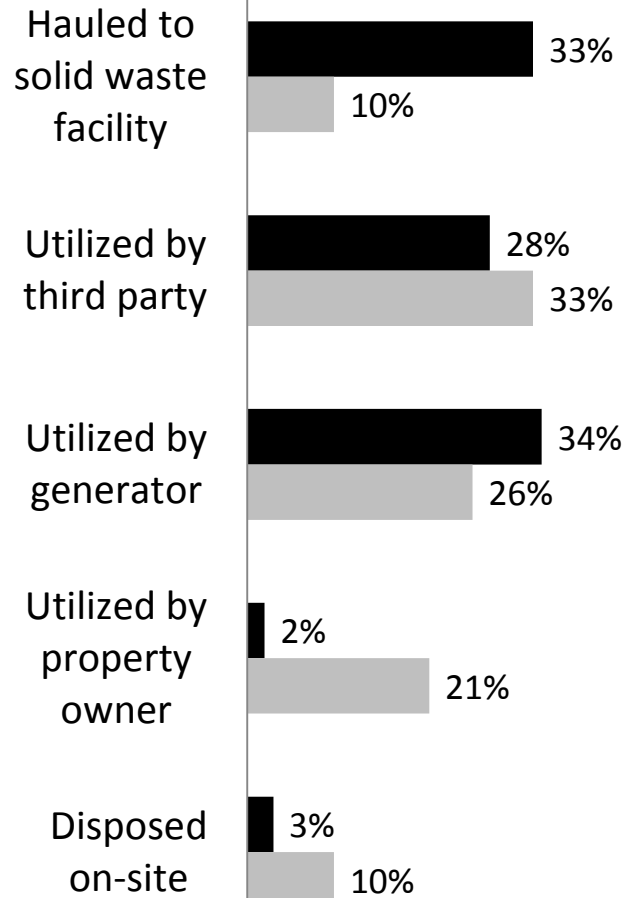
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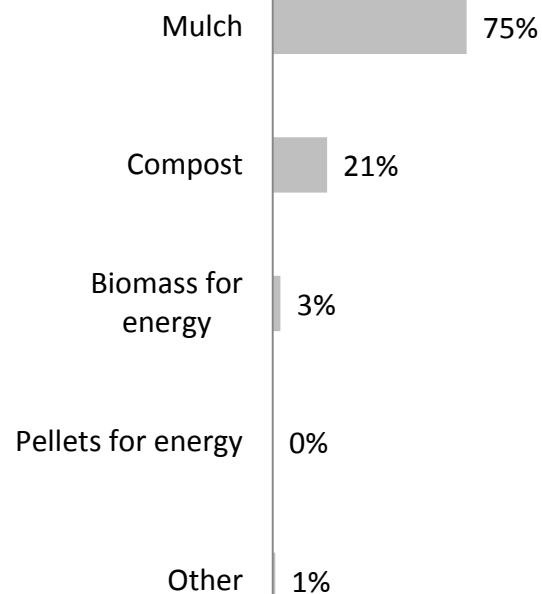
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Generator UFPs



Urban Forest Waste Practices

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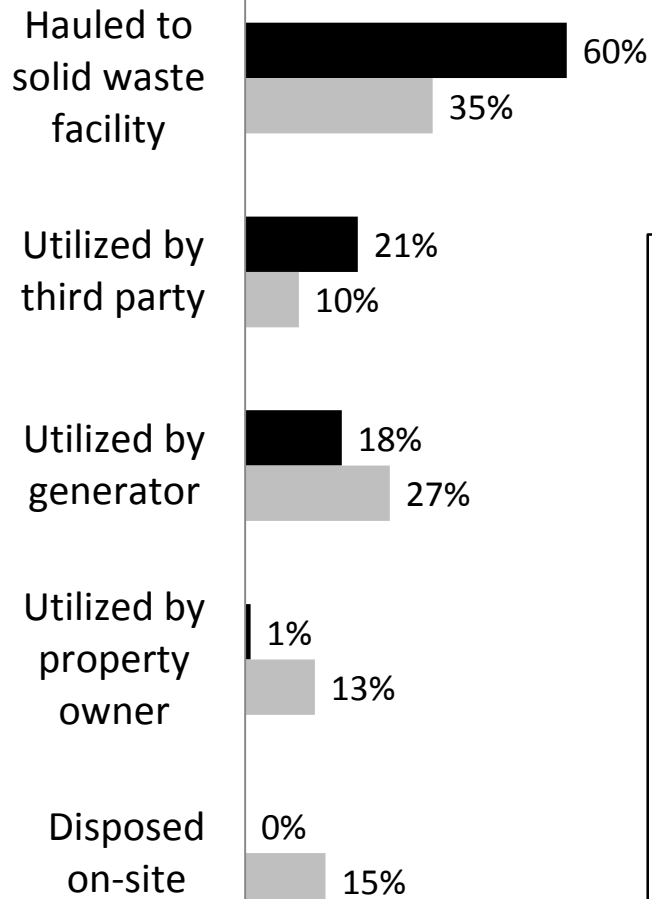
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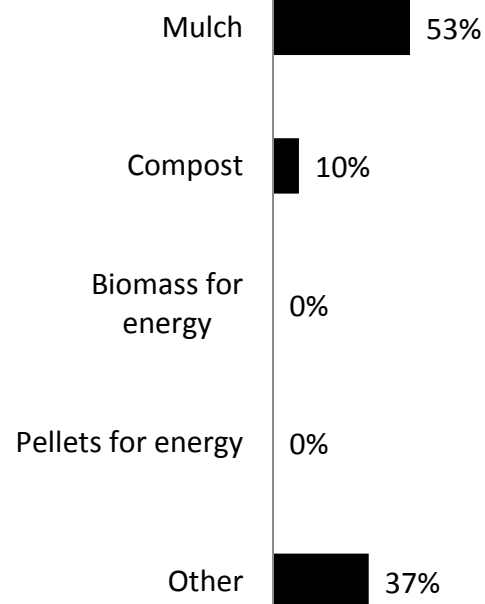
SUMMARY

Fate of Brush

■ Municipal Operations
■ Private Arborist Operations



Generator UFPs



Urban Forest Waste Practices

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Fate of Brush

■ Municipal Operations
■ Private Arborist Operations

Hauled to solid waste facility
60%
35%

Utilized by third party
21%
10%

Utilized by generator
18%
27%

Utilized by property owner
1%
13%

Disposed on-site
0%
15%



Generator UFPs

Mulch 53%

Compost 32%

Biomass for energy 15%

Pellets for energy 0%

Other 0%

Urban Forest Waste Perceptions

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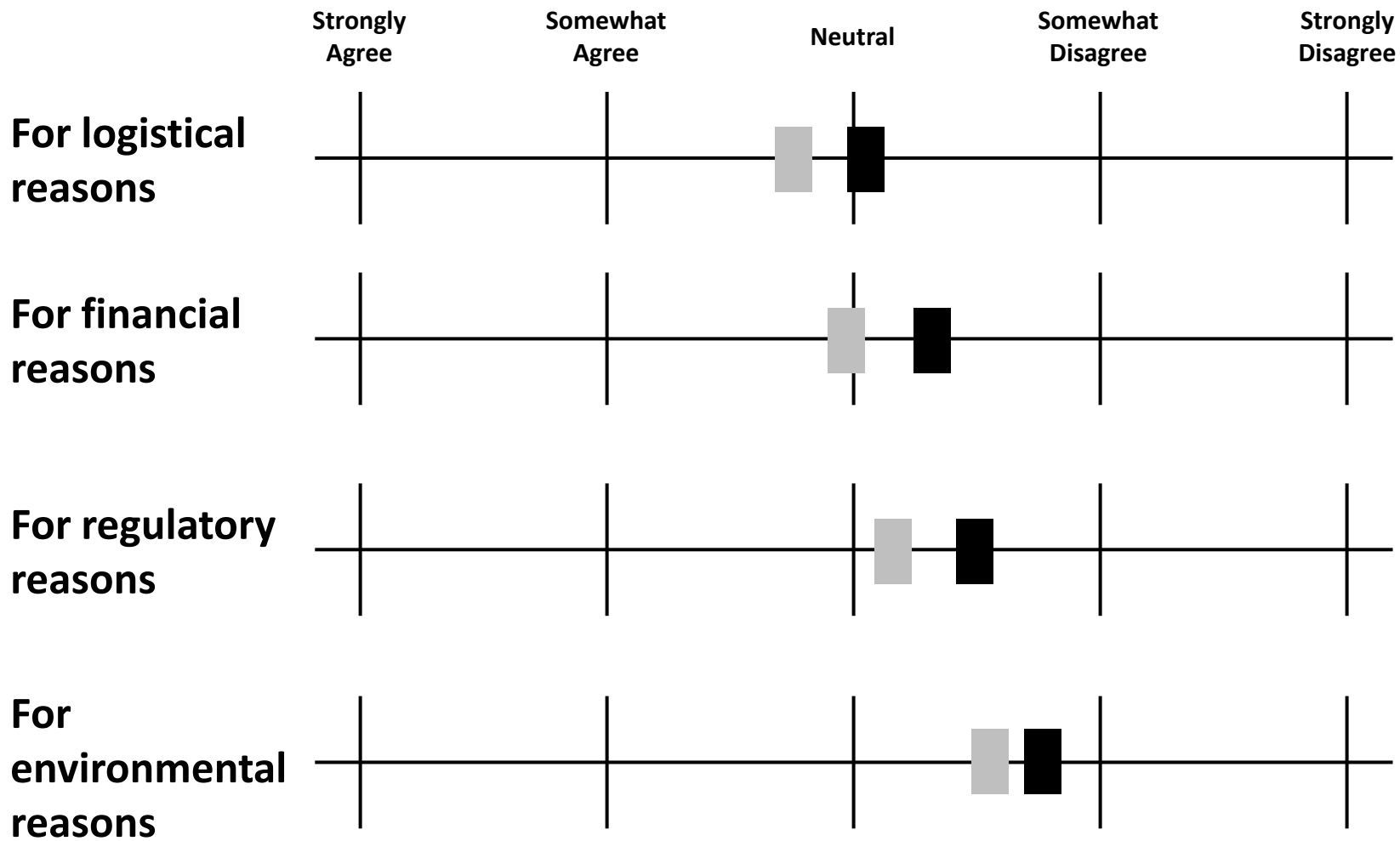
RESEARCH

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SUMMARY

My operation seeks to increase UFW utilization...

Municipal Employees
Certified Arborists



Urban Forest Waste Perceptions

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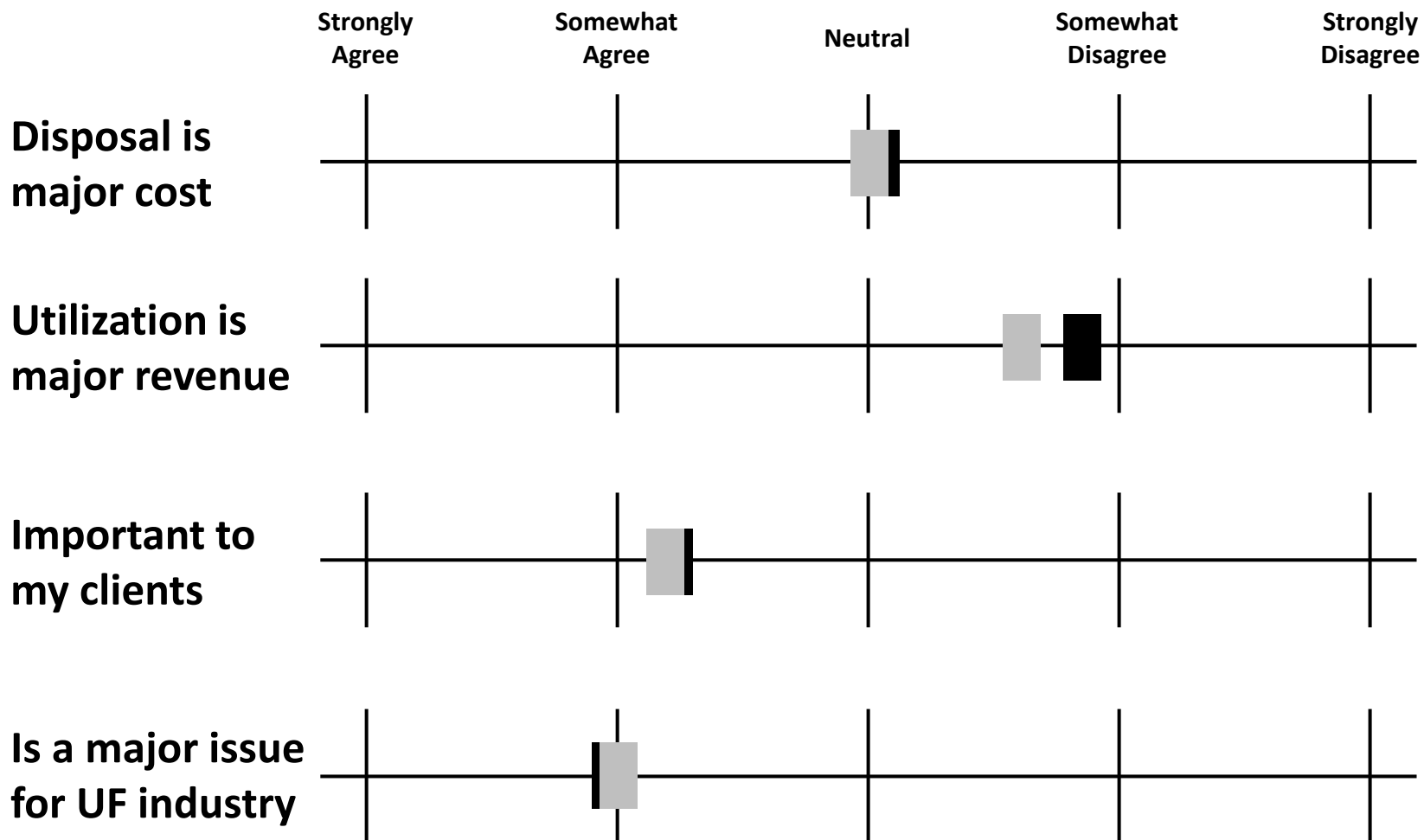
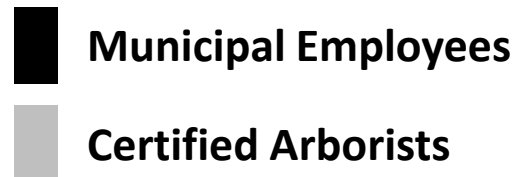
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Urban forest waste...



Urban Forest Waste Perceptions

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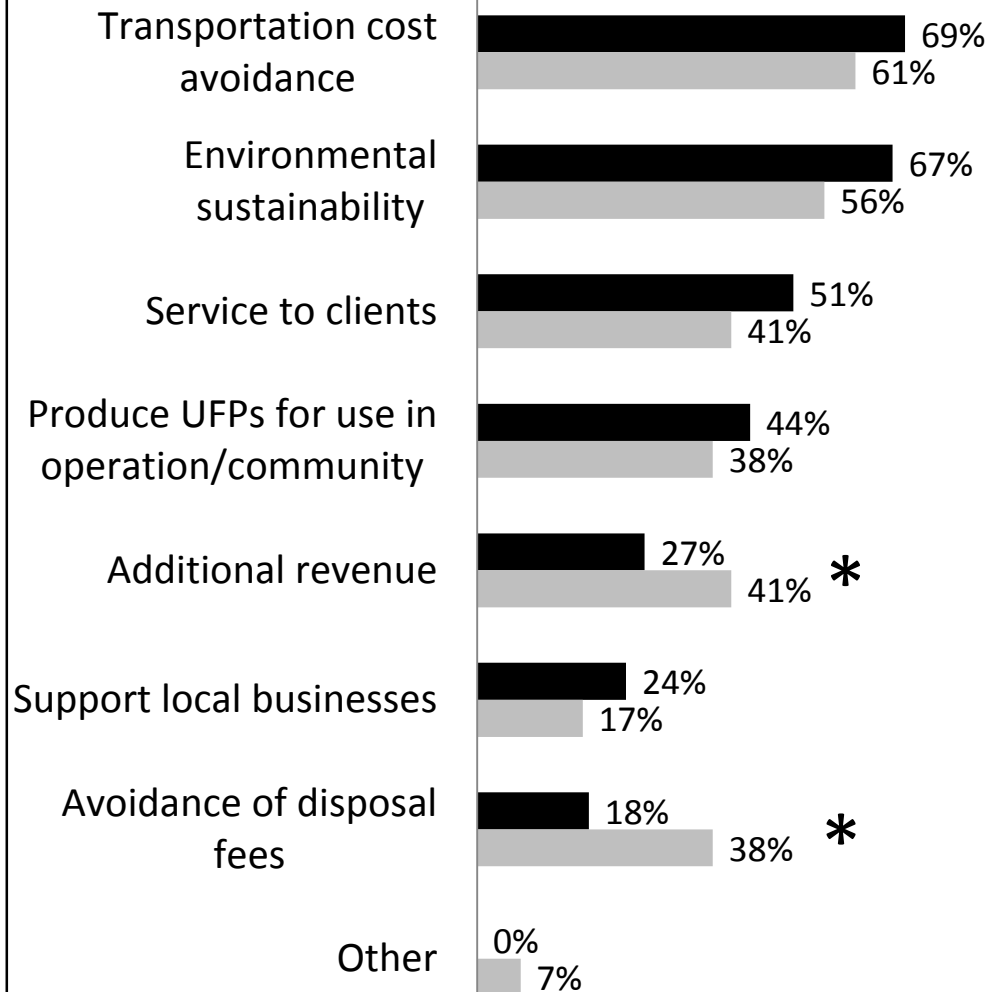
LOOK AHEAD

SUMMARY

Incentives for further UFW utilization

■ Municipal Employees

■ Certified Arborists



Urban Forest Waste Perceptions

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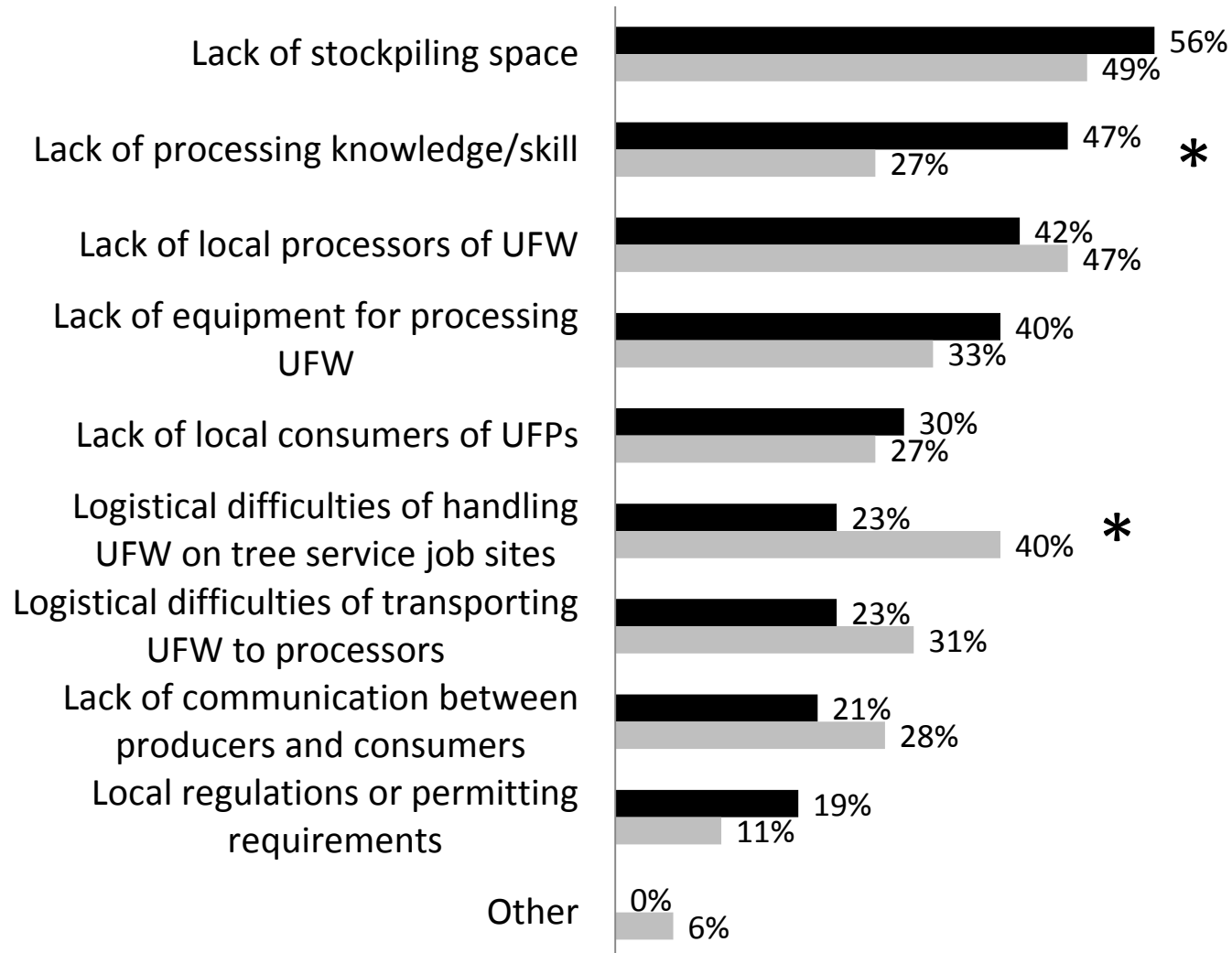
RESEARCH

LOOK AHEAD

SUMMARY

Barriers for further UFW utilization

■ Municipal Employees
■ Certified Arborists



Hypotheses to be tested

- **Is wood truly under-utilized?**
- **How much carbon can be offset by wood utilization?**
- **Is wood utilization better or worse for air quality?**
- **What is the economic impact of utilization?**



Source: <http://www.greenwasterecycleyard.com>

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Capabilities to be developed

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- **Mensuration and procurement of urban wood**
- **Practical ways to transport, stockpile, and sort urban wood**
- **Technologies to connect urban wood generators and consumers**
- **Marketing campaigns for urban wood products**
- **Investment to support start-up companies and innovative solutions to utilization barriers**



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Your questions and comments

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GEORGIA
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