

# Planting Resilience: One Tree at a Time

Lessons learned from disaster  
recovery in Joplin and St. Louis

New Partners for Smart Growth Conference  
St. Louis, Missouri  
February 3, 2017



*'Planting Trees. Enriching Communities.'*

# Presenters & Panelists



Traci Sooter: AIA, LEED AP, Professor of Architecture, Drury University



Josh Carron: Urban Forester, City of St. Louis



Dominique Davis: Neighborhood ReLeaf Coordinator;  
Donna Coble: Executive Director, Forest ReLeaf of Missouri



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# What is Resilience?

- The ability to become strong, healthy and successful again after loss or disturbance
- Sudden (acute) vs. Slow (chronic) Losses
  - Tornados, hurricanes, floods, invasive species
  - Urban decline/disinvestment
- Sudden Loss
  - Joplin
- Simultaneous Sudden and Slow Loss
  - Emerald ash borer in Ward 1



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# Effects of the Loss of Trees

- Numerous studies find exposure to community forests improve **mental and physical health**, including:
  - Higher birth weights
  - Fewer deaths to cardiovascular and lower-respiratory illness
  - Faster recovery from surgery
  - Stress reduction
  - Lower asthma rates
  - Fewer symptoms for kids with ADHD



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# Effects of the Loss of Trees

- Studies that look at **environmental justice** find huge disparities in access to trees and parks in lower vs. higher socioeconomic neighborhoods.
  - Losing trees to pests or natural disaster in these areas only exacerbates these disparities and further negatively impacts health and social ties.



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# Effects of the Loss of Trees

- Other studies have demonstrated that there are strong connections between access to trees and green space and **social ties**.
  - Areas with more trees attract groups of people with larger variety of ages than spaces without trees.
  - More robust relationships between neighbors are found in areas with more vegetation.
  - Children play more creatively in spaces with trees.
  - Improved social ties are a pathway to better health.



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# Sudden Loss of Trees: Ecosystem Costs

- Research tells us emerald ash borer (EAB) is estimated to have killed over 100 million trees since first discovered in Detroit in 2008
  - Ecological costs to communities are staggering – 14,000 St. Louis ash trees provided the City with nearly \$2M in yearly ecosystem benefits.
- Joplin lost 25,000 trees and other vegetation on a single day due to the EF-5 tornado
  - Ecosystem losses of over \$3M per year.



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# Sudden Loss of Trees



<http://www.semissourian.com/gallery/7852>



<http://fox2now.com/2016/09/07/st-louis-city-to-replace-13000-ash-trees-because-of-emerald-ash-borer/>

- Joplin natural disaster:
  - EF-5 tornado on 5/22/11 – a sudden loss of 25,000+ trees, 161 people, 8,000 buildings
- City of St. Louis emerald ash borer infestation:
  - Began removal of 14,000 ash trees in fall 2016
  - Some Wards in serious economic decline and/or have low existing tree canopy



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# Recovery: Who Leads the Way?

- How can communities create green spaces or plant trees to mitigate disaster or loss?
  - “Firesouls” – key actors in design, stewardship, environmental governance in the community
  - Urban greening as a mechanism to enhance resilience, recovery and adaptation both pre- and post-disturbance/disaster



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# Making It Happen

- Funding & Support

- Joplin:

- TKF Foundation; Missouri Department of Conservation; Americorps; Wal-Mart Foundation; Drury University (Joplin)

- St. Louis:

- Mysun Charitable Foundation; Wells-Fargo/National Fish & Wildlife; City of St. Louis Forestry



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# St. Louis & Joplin “Firesouls” and Friends

- Joplin
  - Chris Cotten, City of Joplin Parks & Recreation Director
  - Traci Sooter, Drury University (and colleagues)
  - Erika Svendsen, USDA Forest Service (and colleagues)
  - Keith Tidball, Cornell University
  - Donna Coble, Forest ReLeaf of Missouri
- St. Louis
  - Josh Carron, Parks, Recreation & Forestry (and colleagues, past and present)
  - Ward 1 Neighborhood Improvement Specialists & Alderwoman
  - Forest ReLeaf of Missouri staff



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# Community Response – St. Louis

- St. Louis EAB Infestation & Response
  - Removal plans in place in 2008; staged over 5-year period
  - Strategic Communications Plan
    - City Forestry; Mayor’s Office; Forest ReLeaf; Vector Communications
    - Tree signs, infographics, media outreach, schools, back to school events
  - Ward 1 selection factors
    - % of ash trees; low existing canopy; high socio-economic need
    - Committed leadership: Alderwoman Sharon Tyus, Neighborhood Improvement Specialists
    - City Forestry, Forest ReLeaf longstanding relationship
  - Neighborhood engagement
    - Neighborhood Improvement Specialists
    - Neighborhood ReLeaf Coordinator
    - Volunteer outreach – door hangers, door to door, social media



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# Community Response – St. Louis

- Lessons Learned
  - Gaining trust is difficult in distressed neighborhoods
  - Identify neighborhood “firesouls” early, reach out to all official and unofficial leaders
  - Find the local gathering places/community centers and arrange to speak to people there
  - Enthusiasm does not necessarily translate to a committed volunteer response; i.e., planting trees
  - Situational awareness is critical; politics, safety, etc.



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# Community Response – St. Louis

- Lessons Learned (continued)
  - Try to time planting projects so as not to coincide with competing events; e.g., large church conference
  - Partner with a local volunteer-driven organization or group to ensure enough planters on hand; e.g., Girl Scouts, Boy Scouts, garden clubs
  - Bring a stump grinder and variety of tools (including child size shovels and gloves)
  - Donuts and hot dogs are a must!



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# Community Response – St. Louis

- What Worked Well
  - Strategic Communications Plan
    - Digital cellphone ads
    - Social media
    - TV/radio
    - Tree tags, infographics, door hangers
    - Presentations
  - Strong Partnership with City Forestry
  - Engagement from Neighborhood Improvement Specialists
  - Kids 5-14 years old planting trees make it fun and engaging for everyone!



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# Community Response - Joplin

- Governor Jay Nixon convened a Tree Roundtable in October 2011
- MO Department of Conservation funded a temporary urban forester
- Forest ReLeaf has provided more than 8,000 trees to Joplin homeowners and City Parks & Recreation



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# Community Response - Joplin

- Partner Outreach Efforts & Projects
  - Cunningham Park:
    - Butterfly Garden & Overlook
    - Volunteer Tribute
    - Planting 161 trees in memory of lives lost
    - Extreme Makeover-Home Edition
  - Other Specific Responses:
    - Forest ReLeaf homeowner tree giveaway
    - Seedling & other tree donations/projects



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# Symbolic Trees



*Volunteer Tribute, Cunningham Park, Joplin – Drury University*

- 161 trees planted in Cunningham Park
- Extreme Makeover-Home Edition, Drury University and Joplin Parks & Rec made greening a priority



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# Open Space, Sacred Place

## A Place to Heal



*Butterfly Garden and Overlook, Cunningham Park*

### TKF OSSP

Portal

Path

Destination

Surround

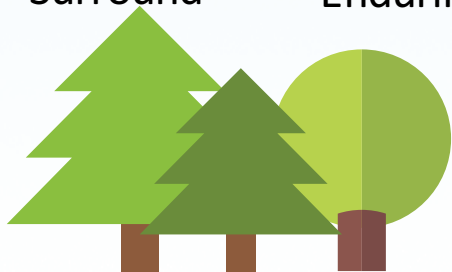
### Worden's 4 Tasks of Mourning

Accept Reality of Loss

Process Pain of Grief

Adjust to World with Loss

Enduring Connection to Loss



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# Linkages Between Urban Greening and Social Resilience

- USFS Research
  - Urban environmental stewards conserve, monitor, advocate for or educate the public about the local environment (Fisher et al, 2007)
  - Stewardship brokers or “bridge organizations” (e.g., Forest ReLeaf, Americorps)



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# Linkages Between Urban Greening and Social Resilience

- USFS Research (continued)
  - Chronic vs. Acute
    - Chronic: urban fiscal crisis...community gardens, conversion of vacant lots, etc.
    - Acute: Joplin's tornado...new parks, tree distribution, nature as pathway for recovery
  - USFS, Cornell University, and Drury University funded by TKF Foundation examine disturbance and recovery stages and the emergence of sources of resilience for: individuals, community and social-ecological systems



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# Green Readiness, Response and Recovery (GRRR)

- The goal is to share lessons learned about the ways that community stewardship can help revitalize neighborhoods and restore nature and to best prepare for, respond to, and recover from disturbances.
- As a Forest Service General Technical Report (GTR) this publication will be available in both print and online for free in fall/winter 2017.
- Key takeaways from this GTR can be used to inform effective community organizing, policymaking, land management planning, and program development.



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# Green Readiness, Response and Recovery (GRRR)

- The intended audiences include:
  - Community groups, NGOs, civic groups and leaders seeking examples and template for how green practices and spaces can be reclaimed, designed, managed and used to strengthen connections to the land and one another in a way that builds social resilience and aids in pre-disturbance preparedness and post-disturbance response and recovery, all while producing substantial community co-benefits.



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# The Bottom Line

- ✓ Helping communities recover by replacing trees and green spaces builds resilience.
- ✓ Resilient neighborhoods are more likely to thrive.
- ✓ Smart Growth demands consideration of these factors in development projects.



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# Thank You



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