

Afforestation: Sustainability Concept to Reality

TMMI (Toyota Motor Manufacturing, Indiana)

IDEM Partners for Pollution Prevention

April 16th, 2015

Paul Delor



Introduction

- Paul Delor

Environmental Specialist, TMMI

- ISO 14001 Coordinator/ Lead Auditor
- Hazardous Waste Specialist
- Earth Day Poster Contest Coordinator
- WHC Certification Coordinator



Sustainable Plant Concept



Toyota Global Vision 2020



Toyota Global Vision 2020

Concept of Sustainability



Area #1 – Research & Development

- o Sustainable Mobility

Area #2 – Production

- o Sustainable Plant Initiative

Area #3 – Social Contribution

- o Activities contributing to sustainable development of people & society

Sustainable Plant *Implementation*



1. Minimize Consumption
 - o Energy / Resources / Recycling
2. Renewable Energy
 - o Wind, Photovoltaic, etc.
3. On-Site Afforestation
 - o On-site tree planting

TMMI On-Site Afforestation






On-Site Afforestation

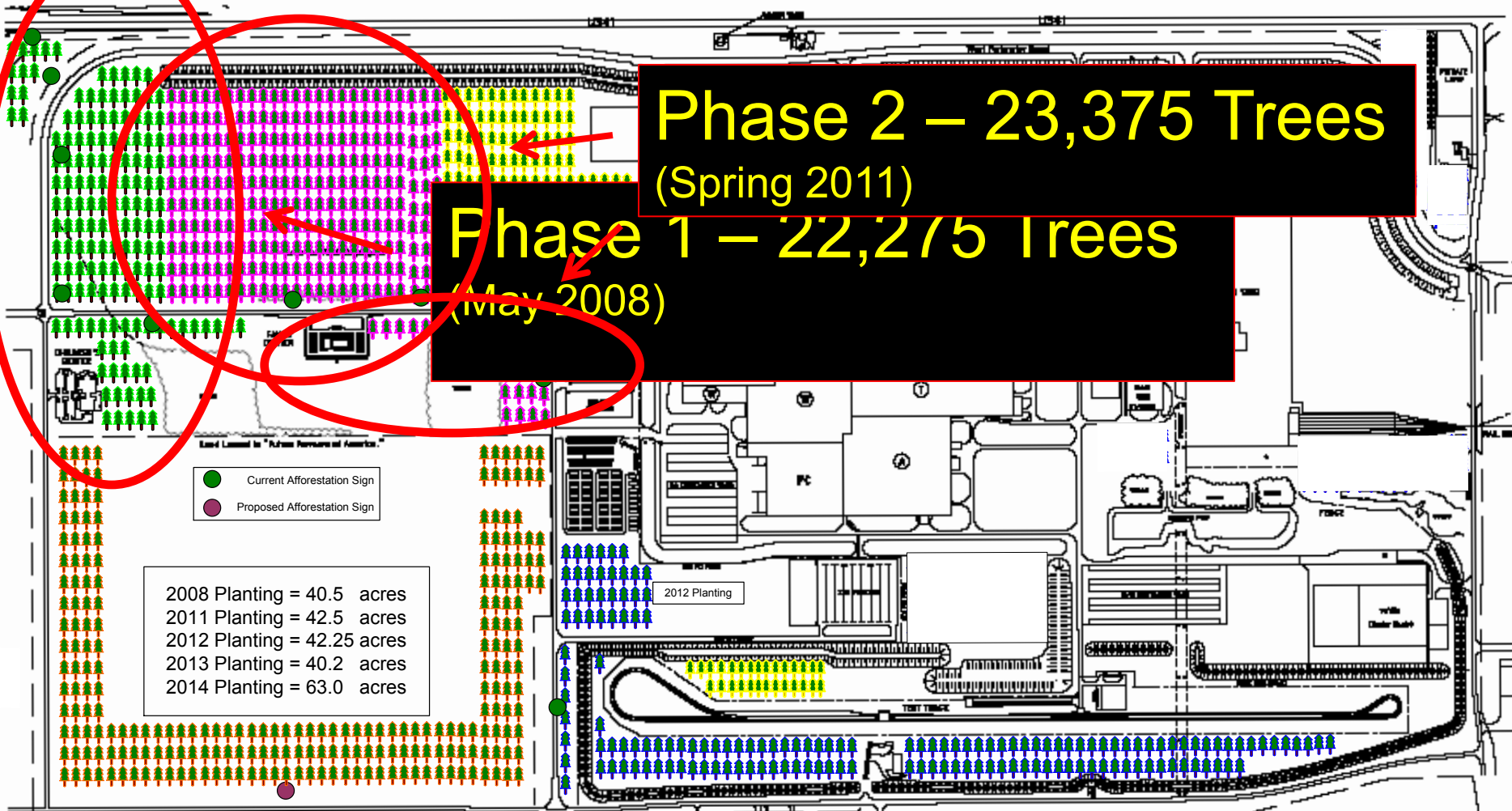
Available Areas



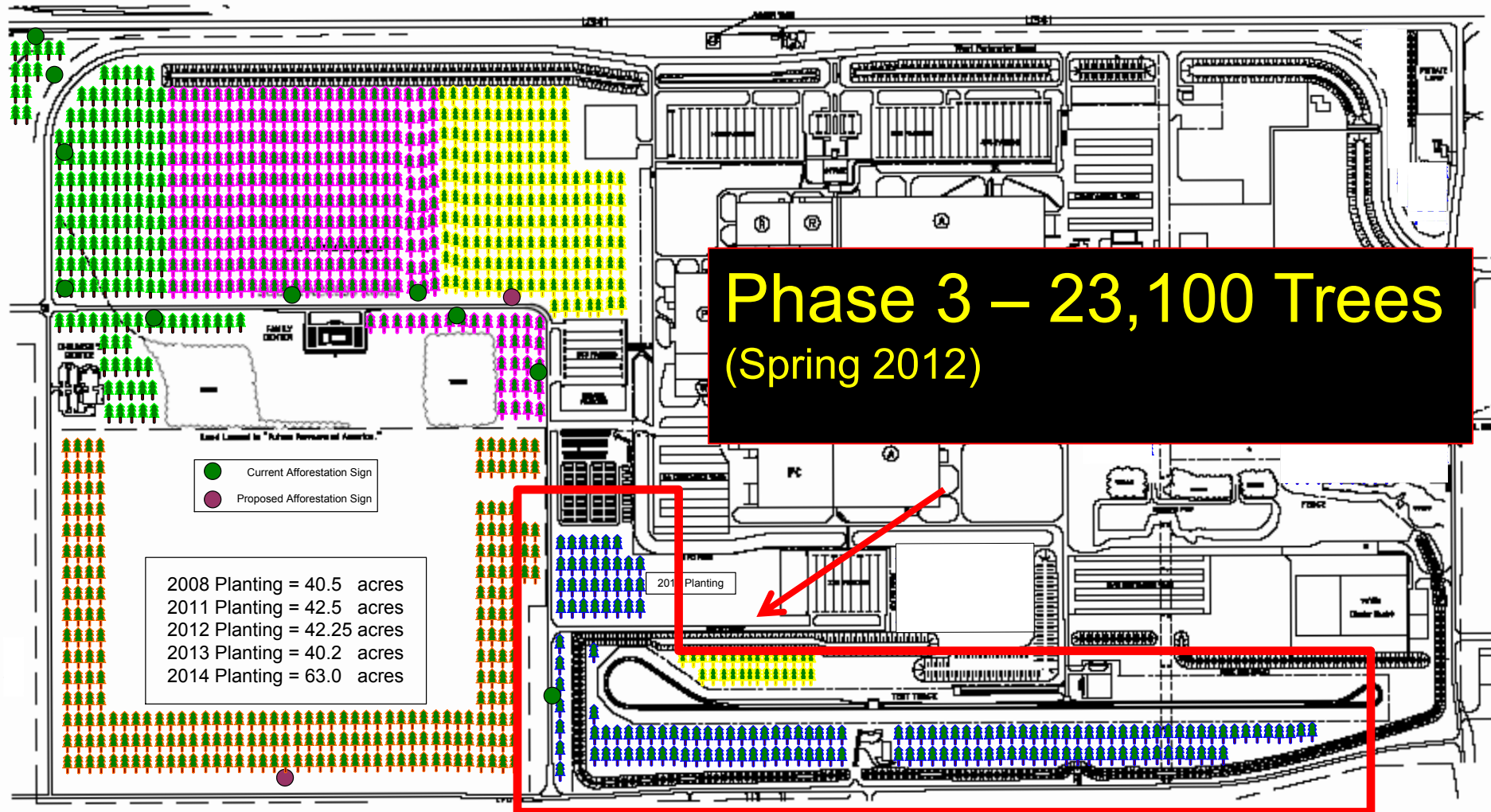
- 
- An aerial photograph of a large, mostly undeveloped land area. The land is brown and appears to be a mix of dirt and sparse vegetation. There are some buildings, roads, and utility lines visible. A yellow rectangular outline with rounded corners is superimposed on the image, framing the text box. The text box is white with a black border and contains two bullet points in blue text.
- 225 acres identified
 - Potential for 130,000+ trees

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TMMI Site Afforestation – Map

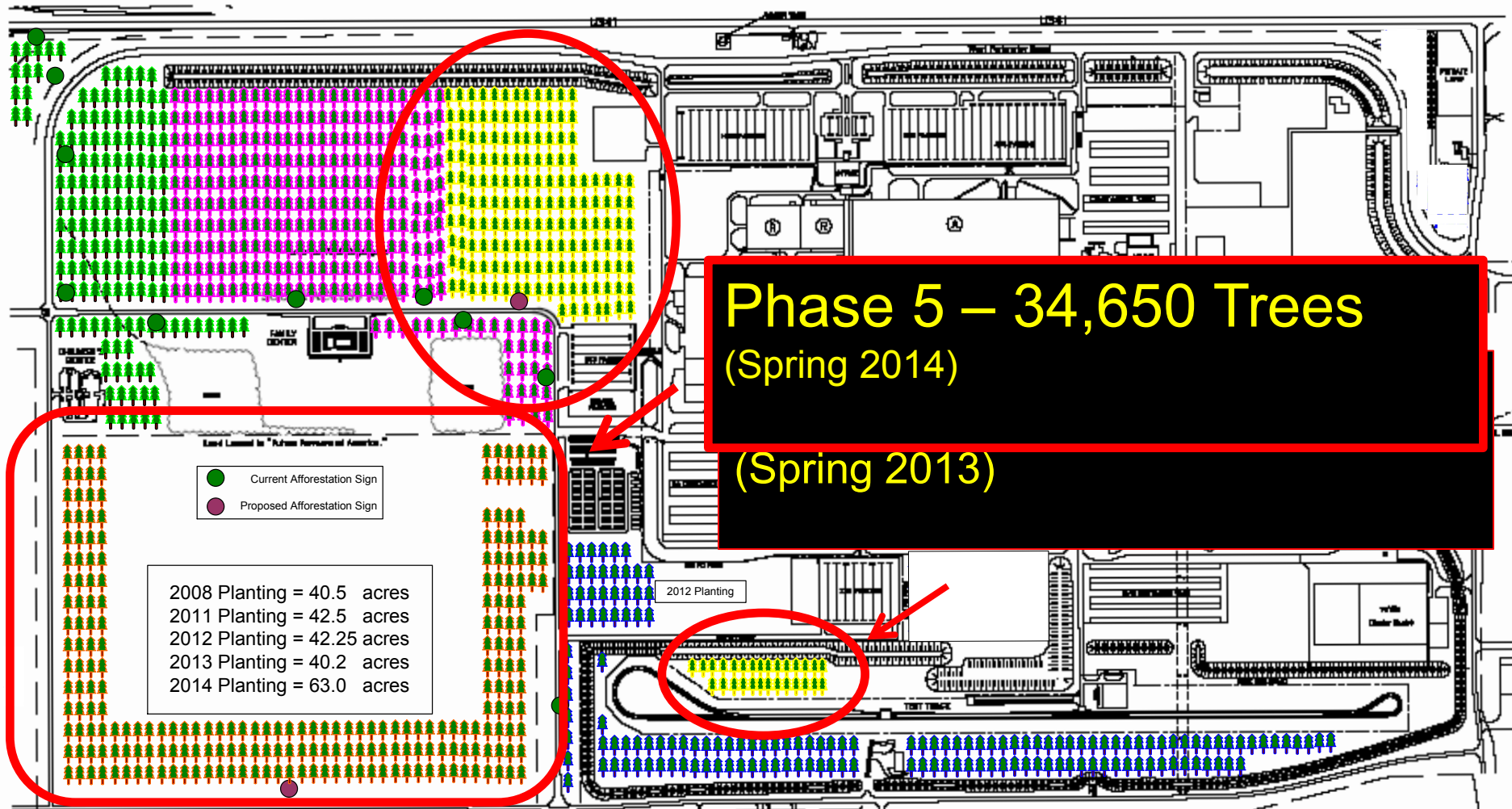


TMMI Afforestation Site Afforestation – Map



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TMMI Afforestation Site Afforestation – Map



Sustainable Plant

TMMI Afforestation Site Afforestation – Map





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Phase 1 Observations/Improvements



Observation

Grass

-
-
-

Improvement

-
- Elimination of Pesticide grasses via herbicide will create cleaner, neater landscape
-



ation

• Tree planting in
• Tree survival

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Phase 1 Observations/Improvements



t of temporary grass kill
areas due to unusually



Improvements/ Considerations

- Different herbicide (Roundup active)
- Don't utilize herbicide on and monitored

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Phase 1 Observations/Improvements

Observation:

Gaps in areas where seedlings
have not survived

Improvements/ Countermeasures:

Replanting not recommended by DNR Forester.
Natural forests will “fill in” on their own and gaps
are expected at this stage of growth



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TMMI Site Afforestation – Map



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Phase 2 Observations/Improvements

Observation:

- High grass growth between seedlings after



ures:

(will die back during
ure

actually help protect
holds moisture near

- Removal of Foxtail grasses **not** recommended by DNR Forester



Plant Cons/Improvements

of specific seedling species

Native Mixture Composition %

Tulip Tree - 16
Black Walnut - 13
River Birch - 10
Silver Maple - 10
Bald Cypress - 9
Overcup Oak - 9
Pecan - 8
Pin Oak - 8
Bur Oak - 7
Sumard Oak - 7
Cherrybark Oak - 5
Red Oak - 3

Phase III - IV

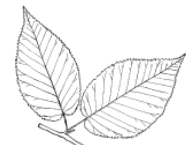
Survival < 25%

Phase I & II

- Increase percenta
Phases I &

Native Mixture Composition – Phase III

River Birch	19%	Silver Maple	19%
Sycamore	15%	Bald Cypress	11%
Sweetgum	11%	Pin Oak	6%
Swamp Chestnut Oak	4%	Shumard Red Oak	4%
Burr Oak	4%	Cherrybark Oak	4%



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Phase 2 Observations/Improvements

Observation:

Lack of Team Member involvement

Improvements/ Countermeasures:

Team Member Planting Area for Phase 3

- Area south of test track (approximately 2 acres/1000 trees) will be planted by Team Members
- Planting day will be coordinated with Public Affairs



TEAM MEMBER AFFORESTATION EVENT

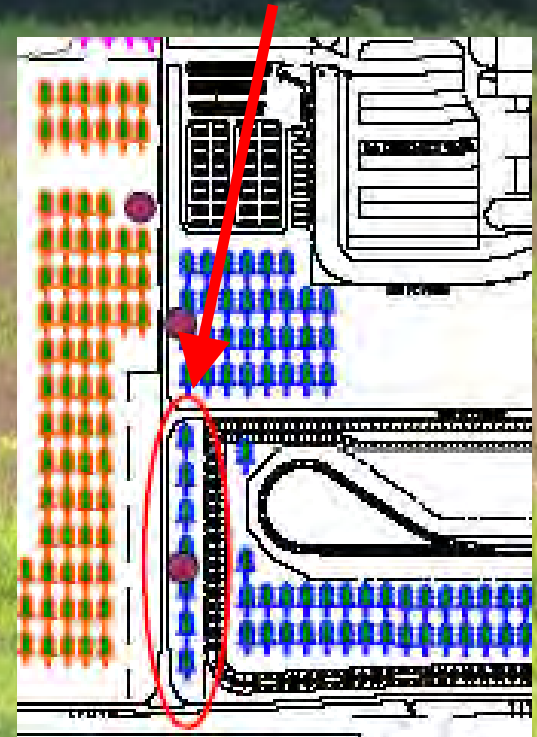
MAY 5th 10am – 2pm

**Open to ALL TM's
and their families**

**We provide all
tools needed!**

**Help TMMI
Celebrate with
planting of 1000
native tree
seedlings!**

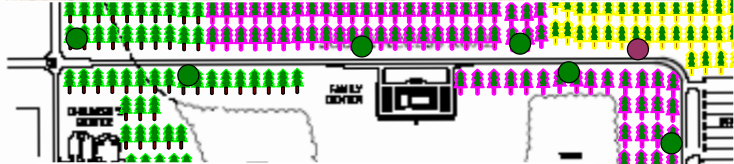
**South of Test Track,
East of road to E.
Assembly Parking lot**



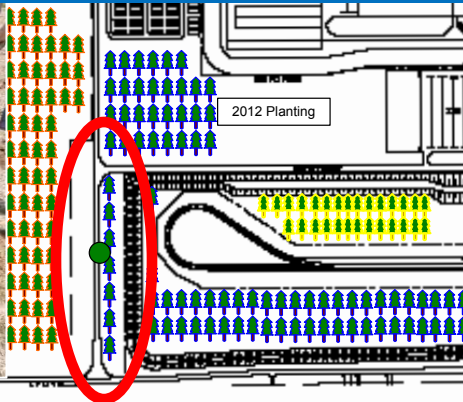
Questions? Contact Paul Delor, Env. Affairs, x2956

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Site Afforestation – Map

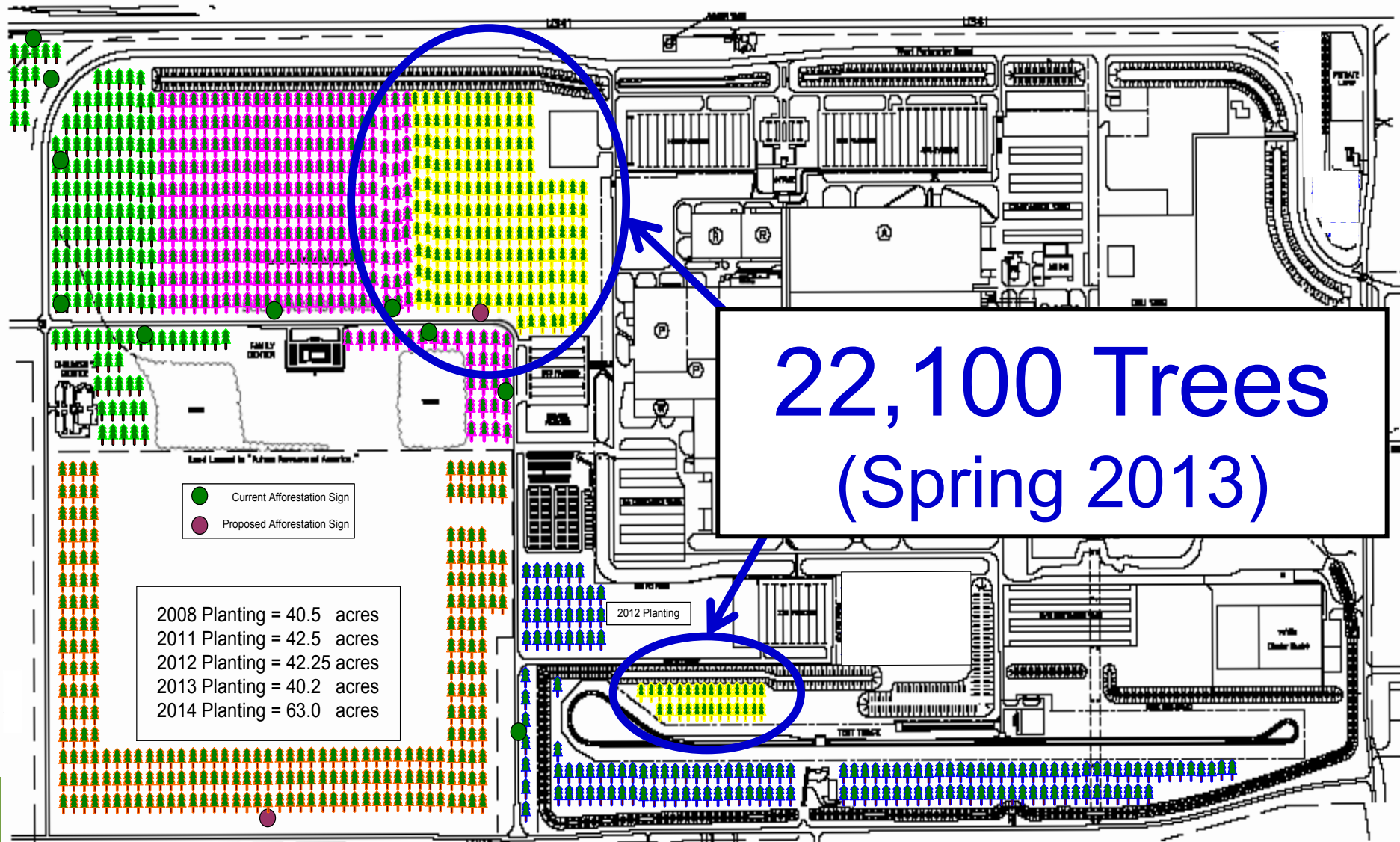


Team Member Planting, May 5th, 2012



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TMMI Site Afforestation - Map Afforestation Plan. Phase 4



Biodiversity

- Small mammals
- Songs Birds
- Beaver
- Coyotes
- Bobcat
- White-tailed Deer
- Red-tailed Hawk



Afforestation Milestone: 100,000th Seedling Planted



Afforestation Plan. Phase 5



2008 Planting = 40.5 acres
2011 Planting = 42.5 acres
2012 Planting = 42.25 acres
2013 Planting = 40.2 acres
2014 Planting = 63.0 acres

Plan



2013



2014

WHC Certification: Wildlife at Work



- 2013 TMMI became a “Wildlife at Work” site, which ultimately helps the regional environment through increased biodiversity.
- The “Wildlife at Work” program conserves land and creates wildlife habitats by providing food, water, shelter, and space.
- “Wildlife at Work” provides public recognition for programs that actively manage and enhance wildlife habitat.
- A site must be actively maintained and monitored for a year before it qualifies for certification.



Wildlife Habitat Council



- **Mission:** The Wildlife Habitat Council promotes and certifies habitat conservation and management on working lands through partnerships and education.
- International Environmental Non-Profit Organization
- Works in Partnerships with Corporations, Conservation Organizations and State and Federal Agencies
- Builds habitat enhancement and community engagement programs on a wide variety of corporate properties
- Fosters voluntary employee involvement and community engagement

WHC: Why Participate



Corporate Level

- Meeting sustainability goals
- KPIs for surveys and reporting
- Increased public recognition
- Increased effectiveness of EMS

Facility Level

- License to operate
- Employee morale
- Improved community relations
- Protection / restoration of biodiversity
- Better rapport with regulatory agencies



Continental Building
Products Silver Grove,
Kentucky

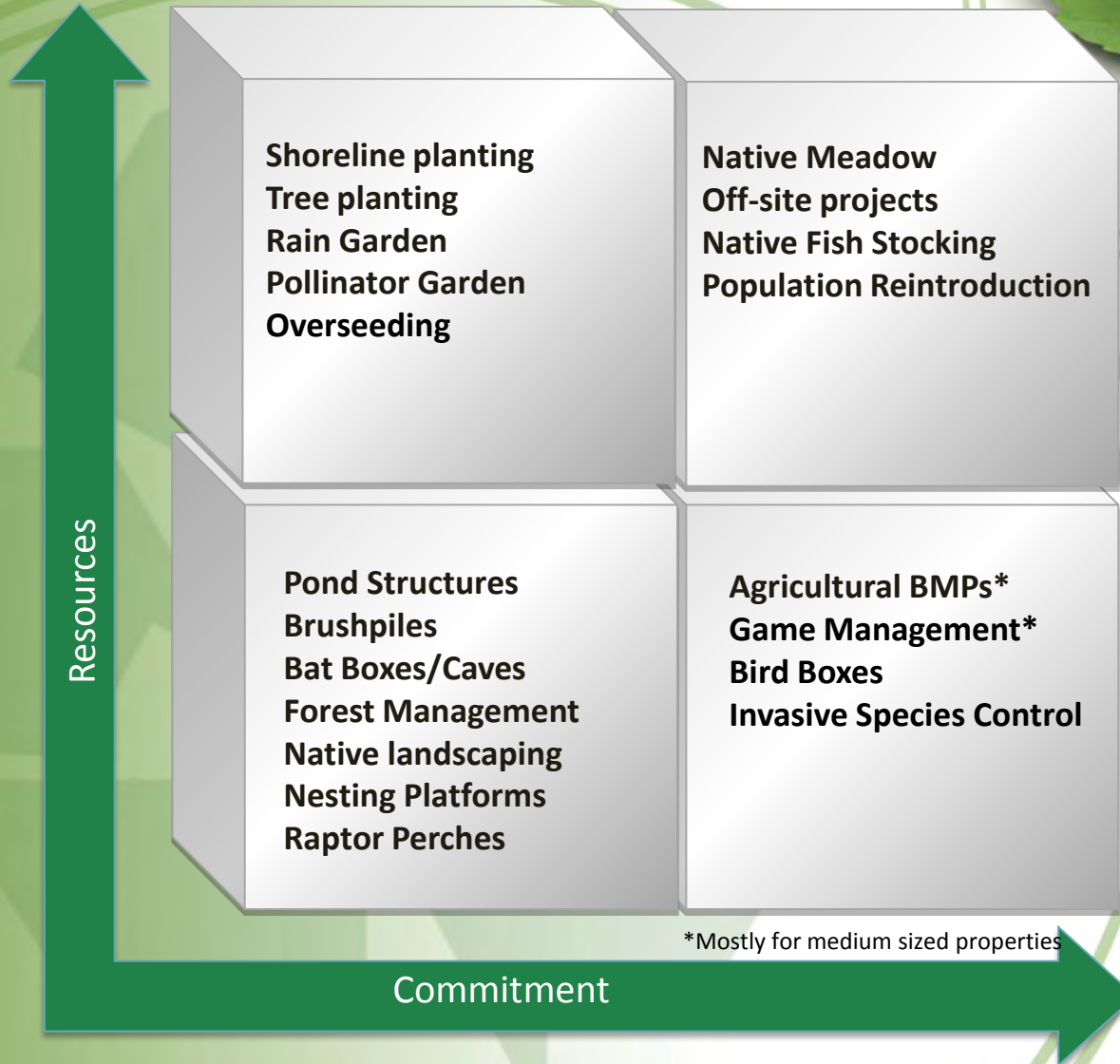
Wildlife at Work

Evaluation of Programs

1. Wildlife Management Plan (WMP) or Project Summary Sheet (PSS)
2. Native and Invasive Species
3. Scope of Projects
4. Partnerships
5. Education and Outreach
6. Level of Demonstrated Commitment



Biodiversity Project Potential



Visibility and Recognition

- International recognition and third-party credibility
- Local media coverage
- Employee and volunteer recognition
- WHC's Annual Symposium
- WHC Awards



Evonik Degussa Corp, Tippecanoe
Lab, Indiana

Questions?

