



SPFA Life Cycle Analysis Project

Part II

SPFA Project Details and Update

Building The Project Team

Active Members of the SPFA LCA Team

Joe Costa
Arkema

Shelly West
Biobased Insulation

Todd Henderson
Henderson-Johnson Co.

Katharine Davino
BASF Foam Enterprises

Tom Ponder
CertainTeed

Monica Karamagi
Huntsman

Bruce Uhlman
BASF

Robert Naini
Demilec USA

Peter Birkbeck
Icynene

Jim Lambach
Bayer Materials Science

Steve Crain
Dow

Jason Hoerter
NCFI Polyurethanes

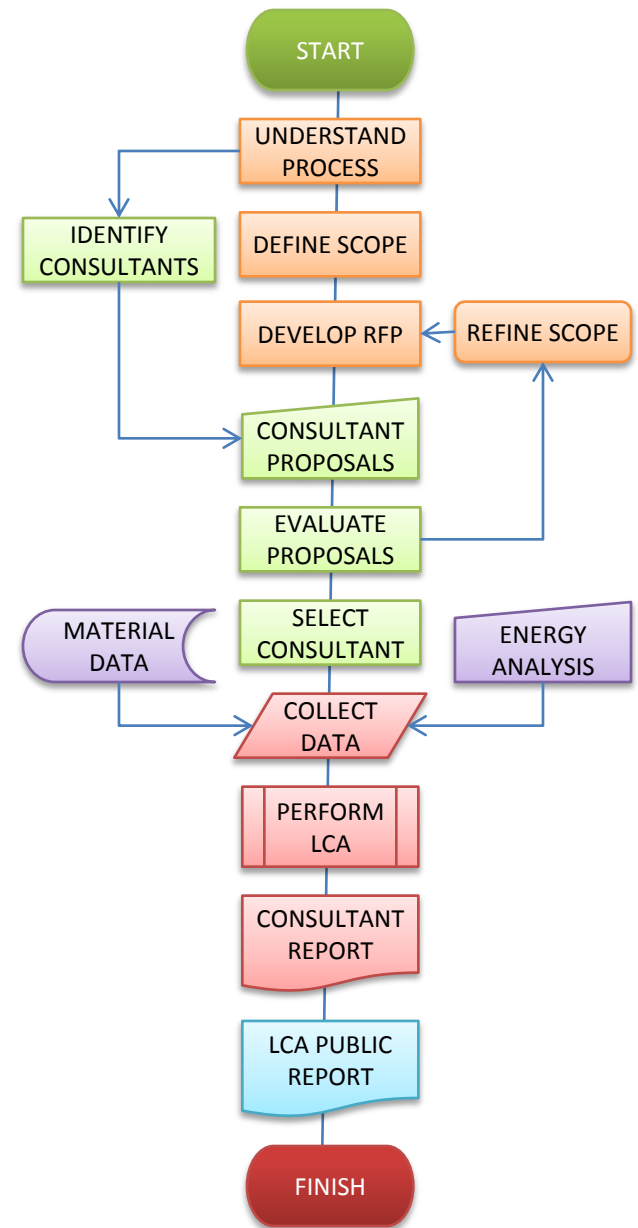
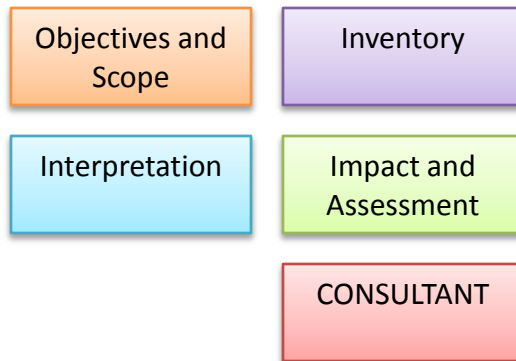
George Pavelovich
Bayer Materials Science

Tom Sojak
Gaco

Project Roadmap

Following the ISO Process

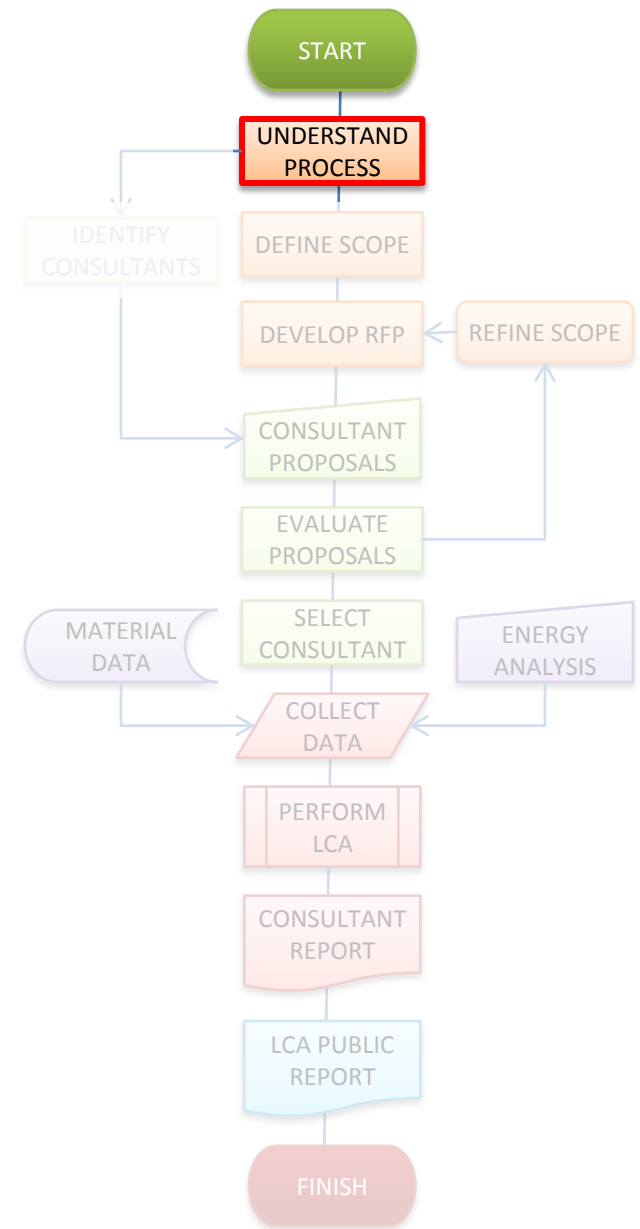
- Based on ISO 140xx Standards
 - Objectives and Scope
 - Inventory
 - Impact and Assessment
 - Interpretation



Understand Process

Guest Presentations

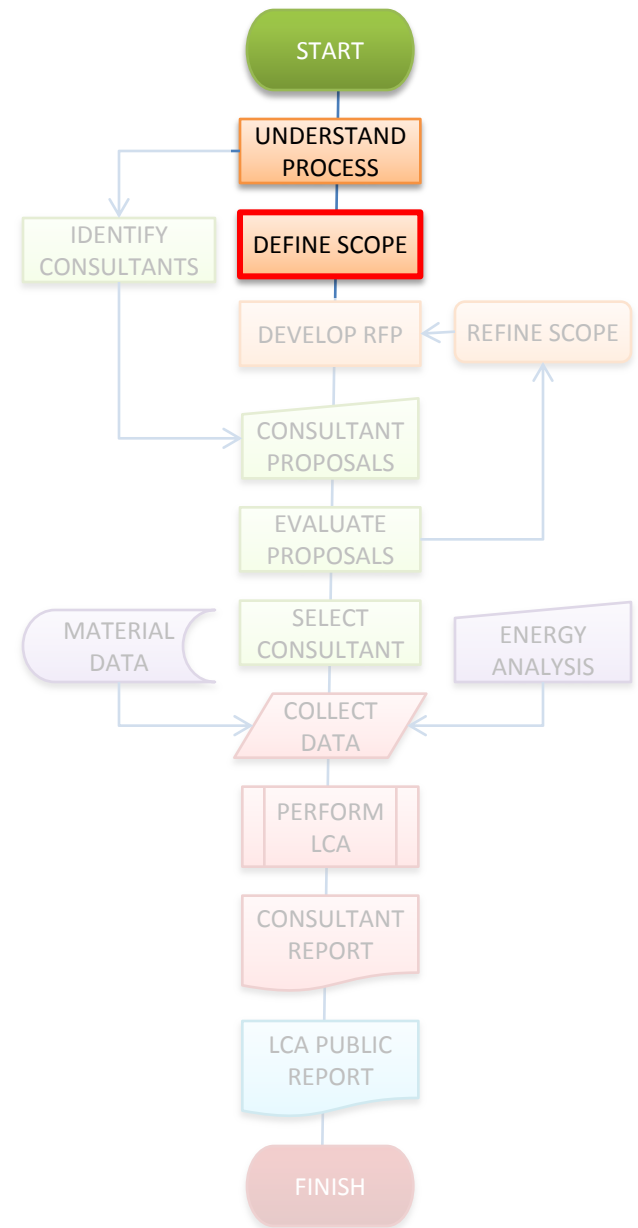
- ISO 140xx Standards
Robert Naini, Demilec
- Eco-Efficiency Analysis
Bruce Uhlman, BASF
- LCAs and Trade Organizations
DeLane Wisner, ACC Consultant
- LCA for SPF Insulation in Residential Buildings
George Pavelovich and Jim Lambach, Bayer Materials Science



Objectives and Scope

Consensus Process

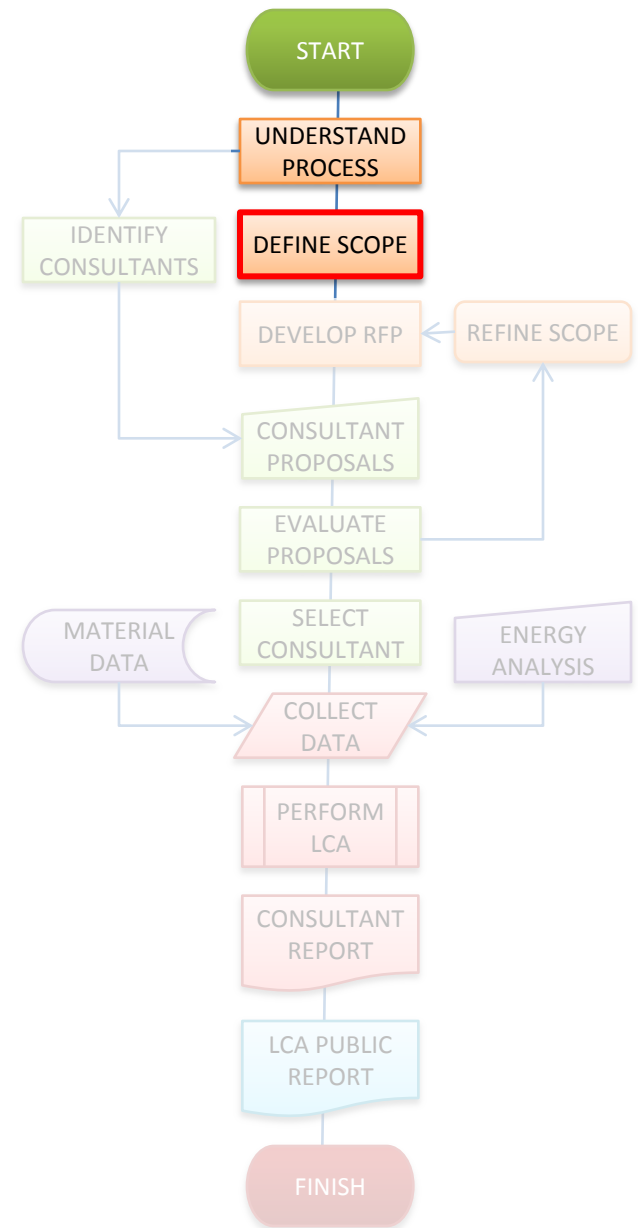
- Used online survey to help define objectives and scope of project
- 12 respondents from project team



Objectives and Scope

Why is an LCA needed?

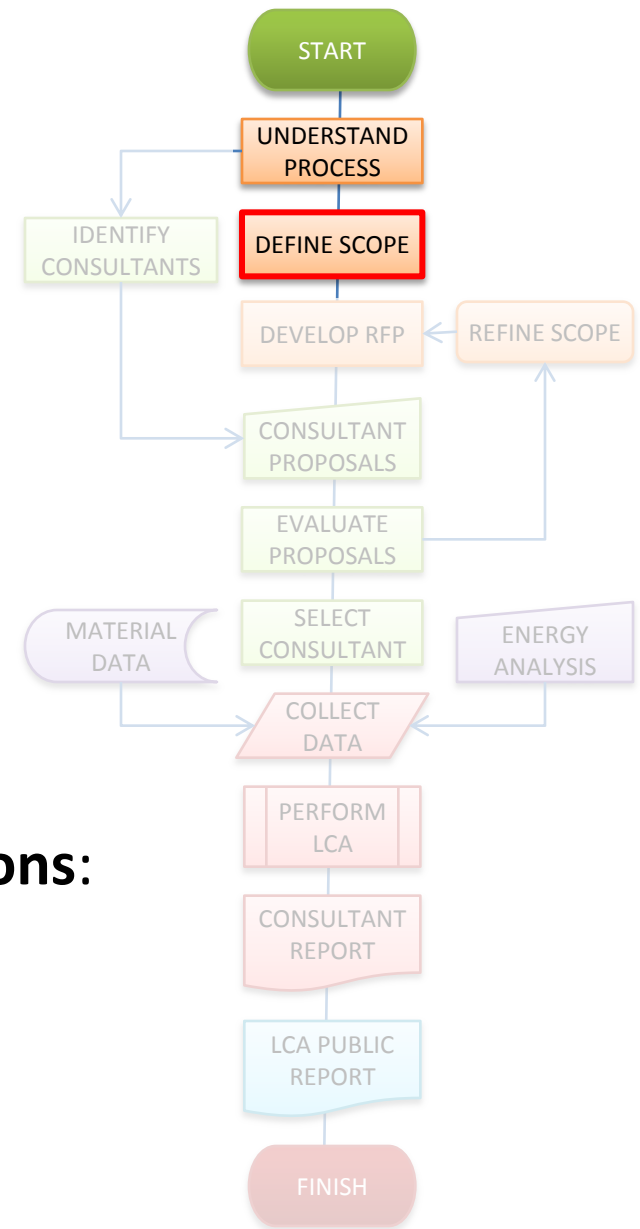
- Compare SPF with other insulations
- Comply w/ green building standards
 - LEED 2009, GBI, BEES, NAHB-GB
- Support 'green' marketing message for SPF without 'greenwashing'
 - Environmental Product Declaration
- Provide selection tool for design professionals
 - U.S. LCI Database



Objectives and Scope

What is our scope?

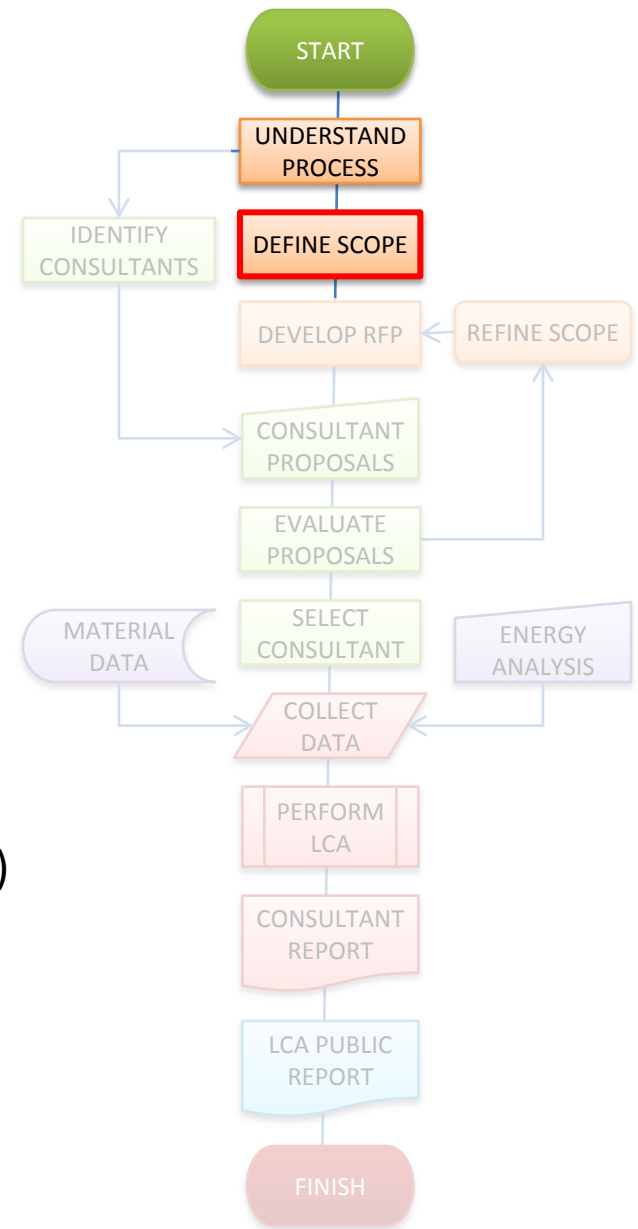
- **Cradle-to-Grave** analysis
- Must include **SPF applications**:
 - Open-cell residential
 - Closed-cell residential
 - Closed-cell commercial roof
- Should include **competitive insulations**:
 - Fiberglass
 - Cellulose
 - XPS
 - Others



Objectives and Scope

What are the metrics?

- **Metrics to include:**
 - Energy Consumption/Savings+CO2 Emissions and Life Cycle Cost **
 - Resource and Raw Materials Consumption
 - Health Effects (indoor air quality, volatile organic compounds, ecological toxicity, etc.)
 - Solid and Liquid Waste (materials disposal)
 - Land Use (extraction, mining, water use,..)
 - Other Emissions (GWP, ODP, acidification, photochemical ozone creation, water, etc.)



Objectives and Scope

What are the metrics?

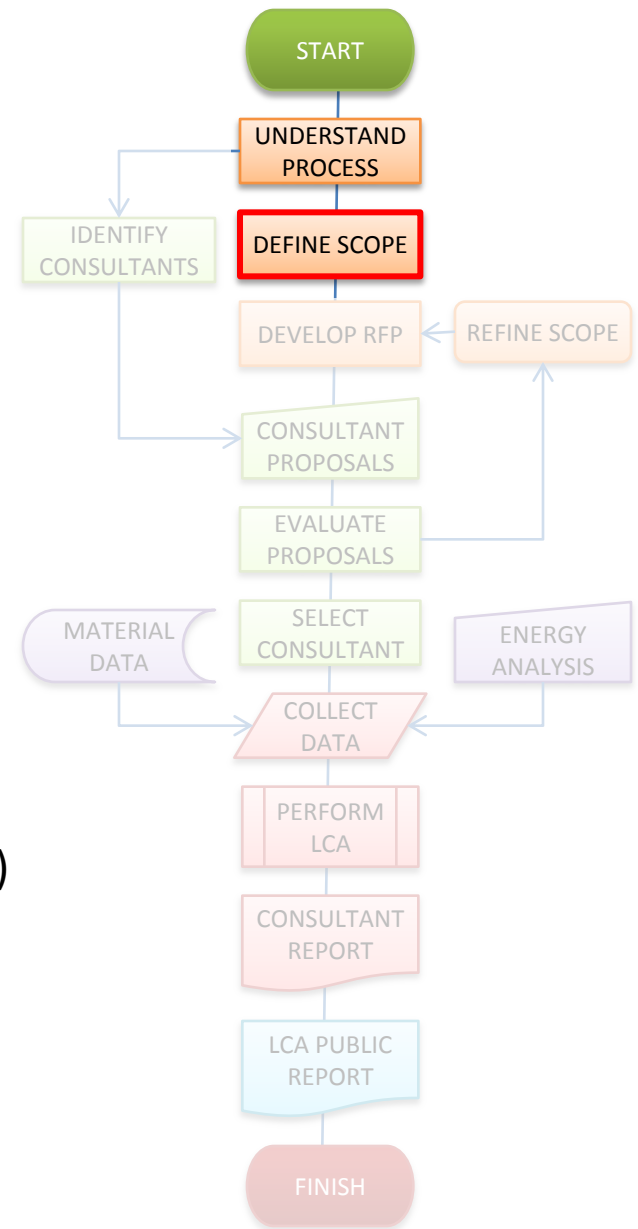
- **Metrics to include:**

PHASE I

- Energy Consumption/Savings+CO2 Emissions and Life Cycle Cost **

PHASE II
PHASE III

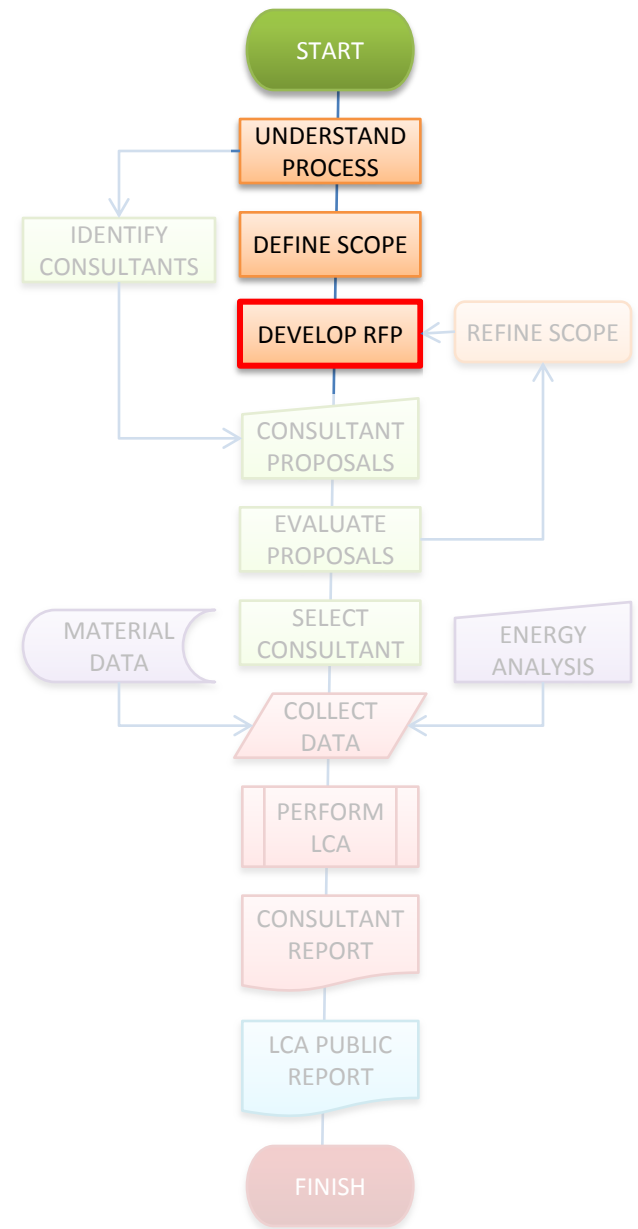
- Resource and Raw Materials Consumption
- Health Effects (indoor air quality, volatile organic compounds, ecological toxicity, etc.)
- Solid and Liquid Waste (materials disposal)
- Land Use (extraction, mining, water use,..)
- Other Emissions (GWP, ODP, acidification, photochemical ozone creation, water, etc.)



Request for Proposal

Needs defined in RFP

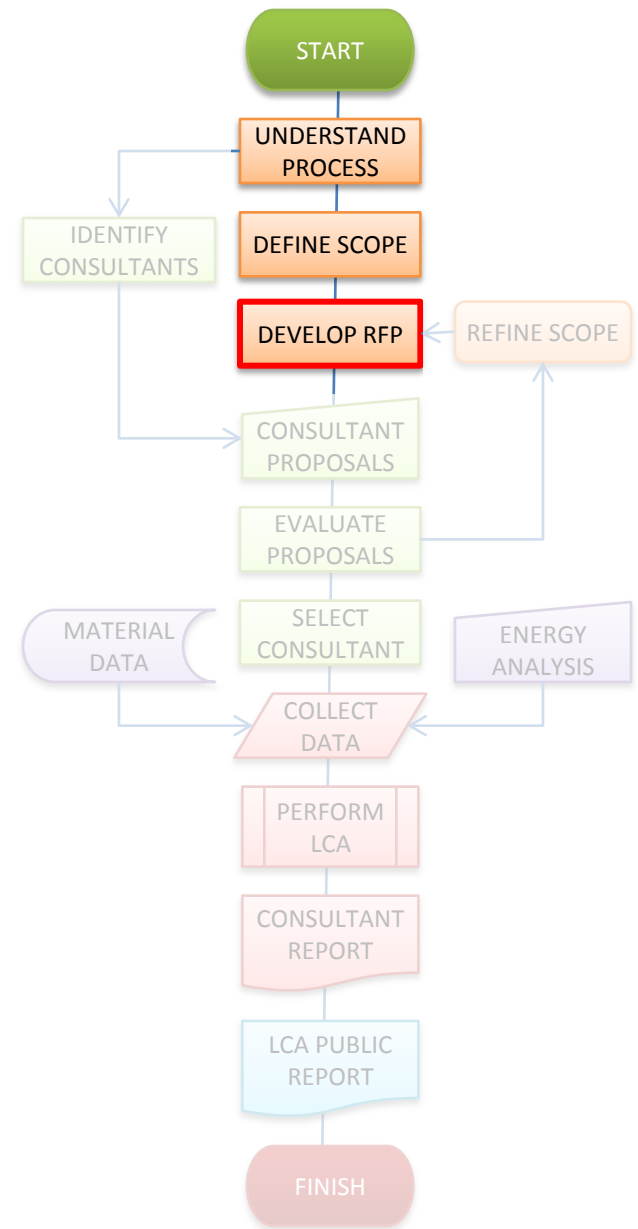
- **PHASE I - Energy and GWP Savings for SPF**
 - Target Completion: Q3 2009
 - Cost: \$25-30k
 - Determine Embodied Energy needed to create SPF and competitive products
 - Estimate Energy Saved over use period in three applications with SPF versus competitive products
 - Calculate Net GWP during use period from three applications with SPF versus competitive products



Request for Proposal

Needs defined in RFP

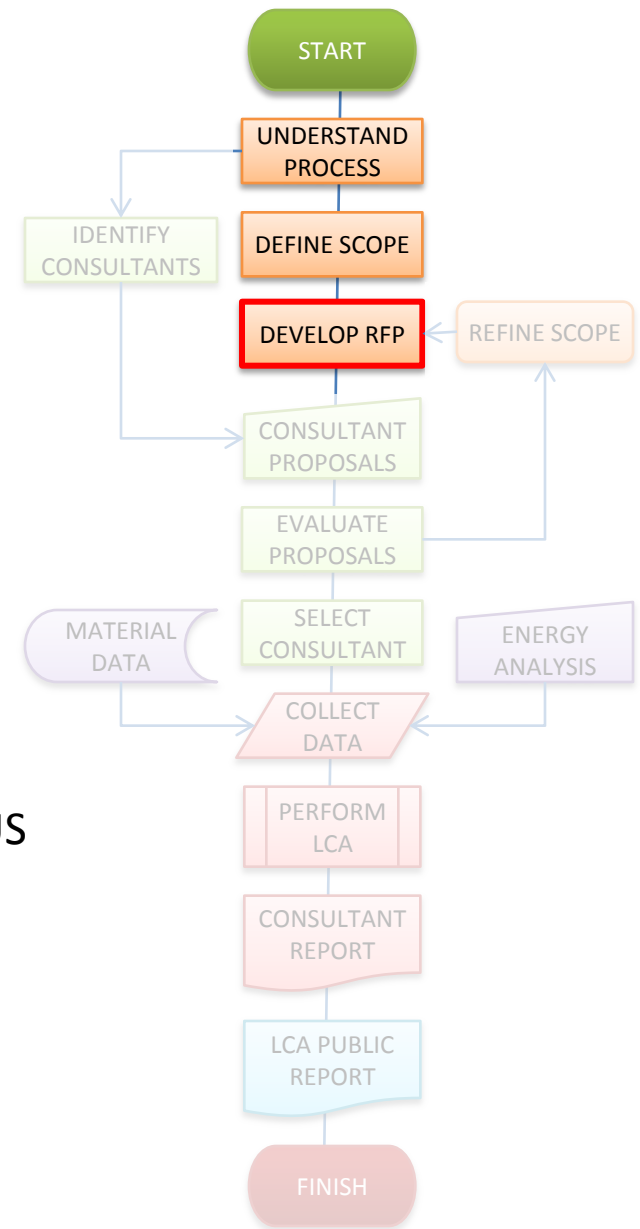
- **PHASE II –LCI and LCA for SPF**
 - Target Completion: Q1 2010
 - Cost: TBD from proposals
 - Develop complete LCI data for SPF to create Environmental Product Declaration and data for US LCI Database, BEES, etc.
 - Perform Complete Life-Cycle Environmental and Cost Assessment for SPF



Request for Proposal

Needs defined in RFP

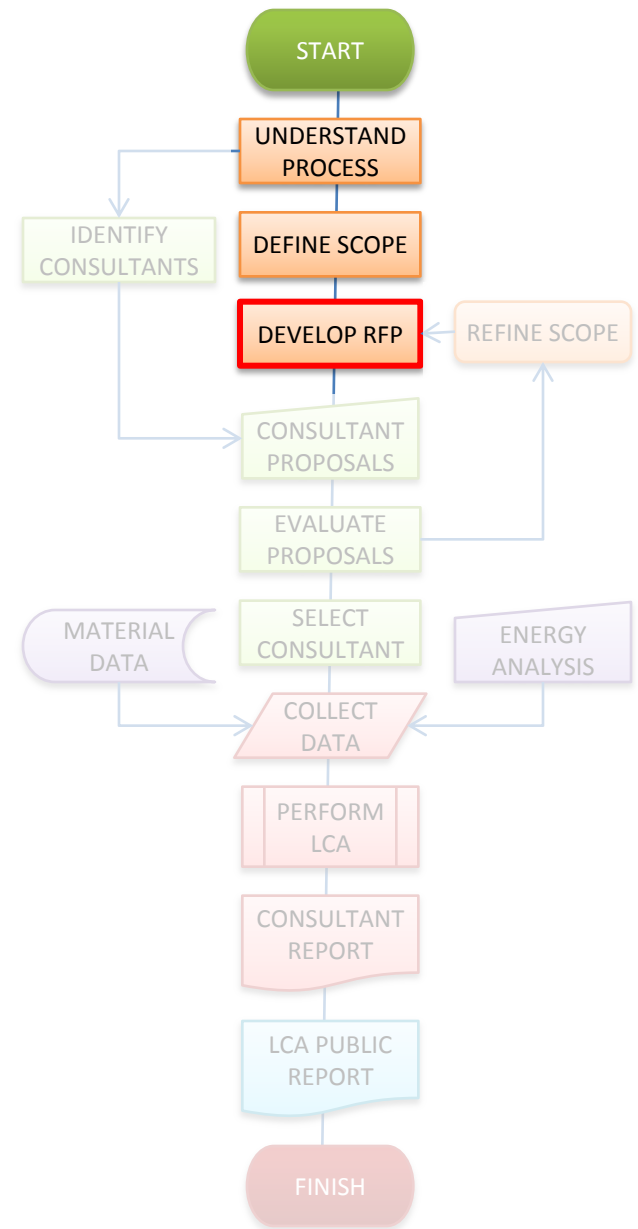
- **PHASE III – LCI and LCA for Other Insulations**
 - Target Completion: Q2 2010
 - Cost: TBD from proposals
 - Collect LCI data for other insulations from US LCI Database, BEES, etc.
 - Perform Complete Life-Cycle Environmental and Cost Assessment for competitive insulation products



Request for Proposal

Needs defined in RFP

- **PHASE IV – Define LCA Roadmap**
 - Target Completion: Q3 2010
 - Cost: minimal
 - Provide a quotation to update the LCA/LCC studies based on individual SPFA members providing proprietary SPF formulations and product cost data.



Request for Proposal

RFP sent to five consultants

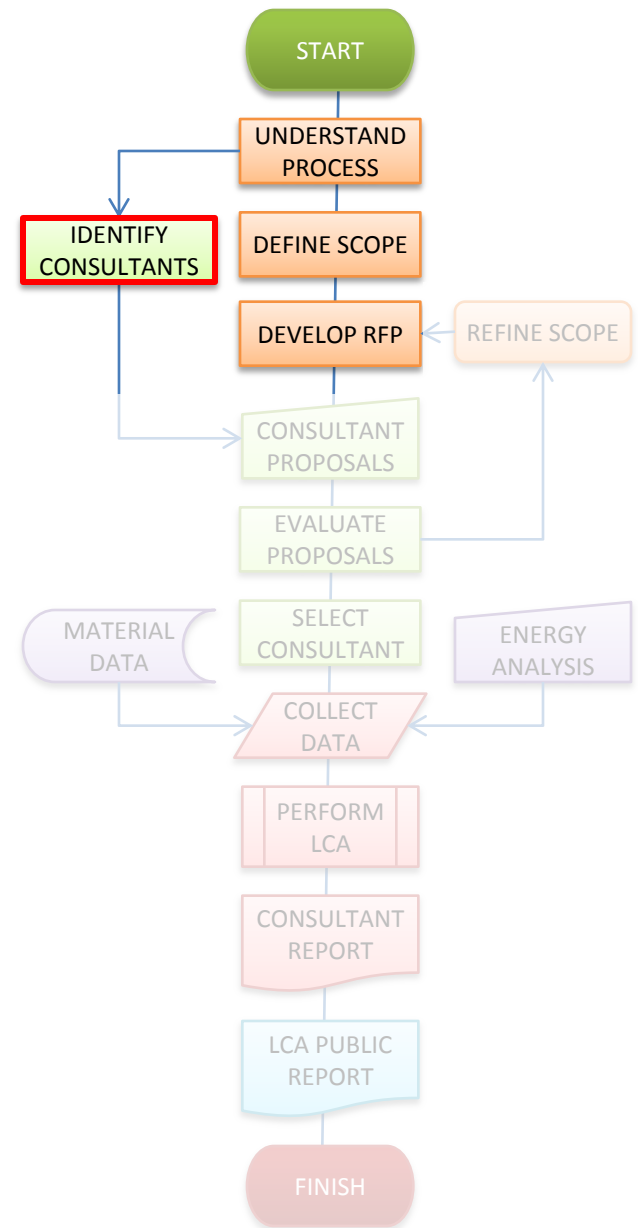
**PE Americas (PE
International GmbH)**
www.pe-international.com

Boustead Consulting Ltd.
www.boustead-consulting.co.uk

**Sustainable Solutions
Corporation**
www.SustainableSolutionsCorporation.com

Franklin Associates
www.fal.com

**Athena Institute
International**



Consultant Proposals

Awaiting proposals – Jan 18th

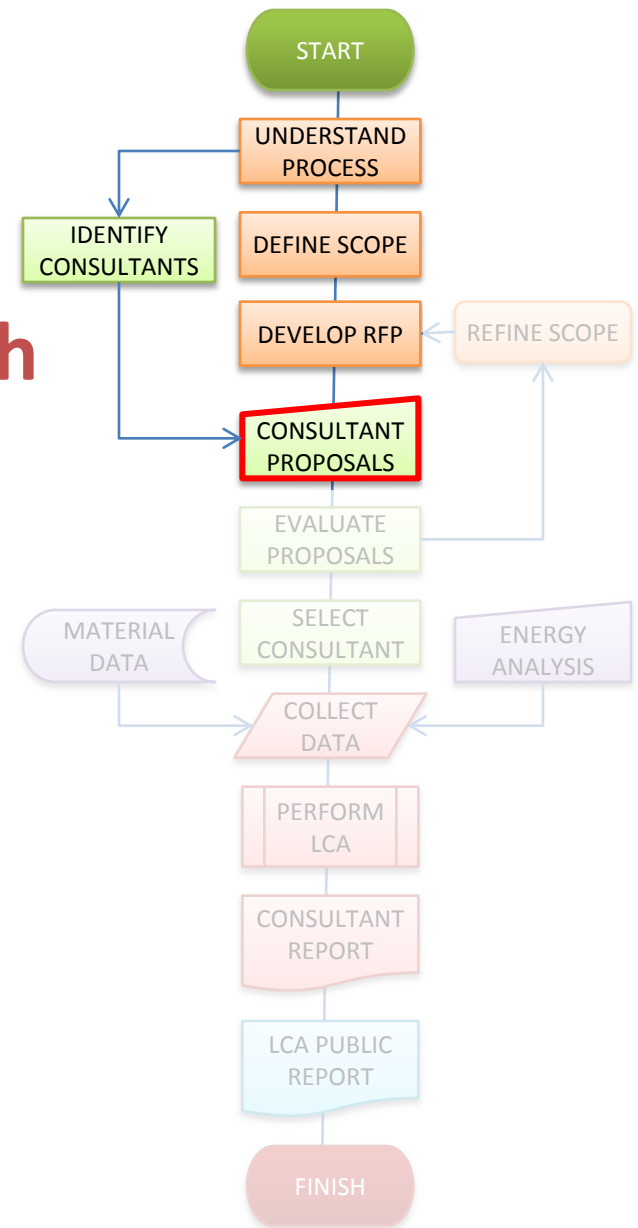
PE Americas (PE
International GmbH)
www.pe-international.com

Franklin Associates
www.fal.com

Boustead Consulting Ltd.
www.boustead-consulting.co.uk

Athena Institute
International

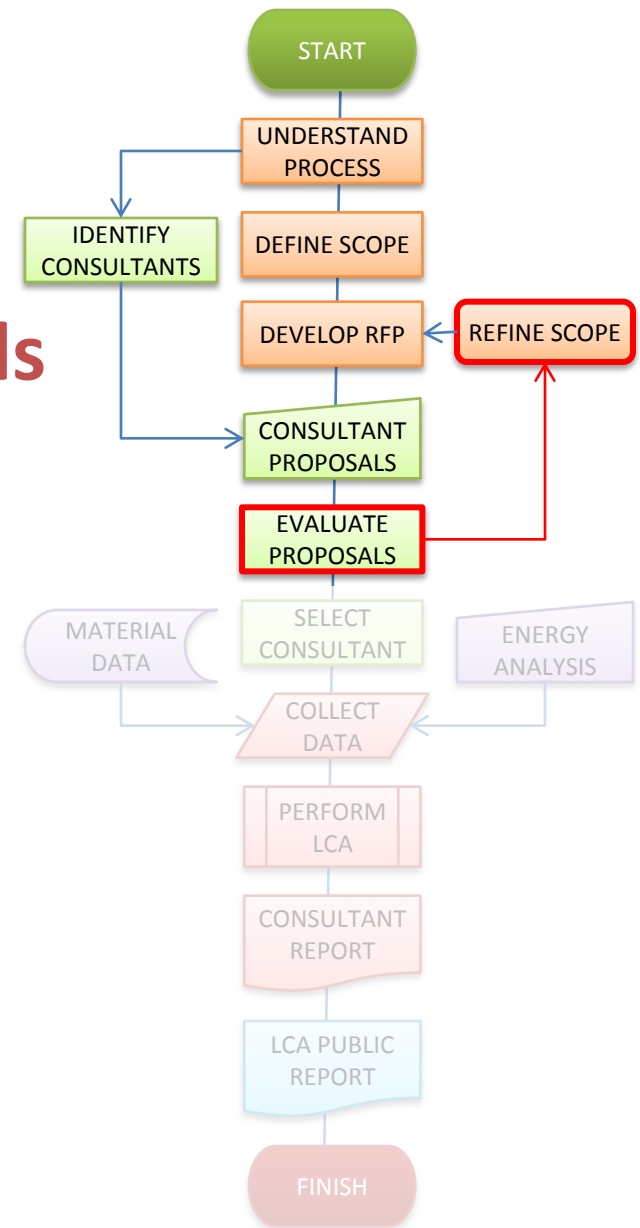
Sustainable Solutions
Corporation
www.SustainableSolutionsCorporation.com



Next Steps

Evaluate and Refine Proposals

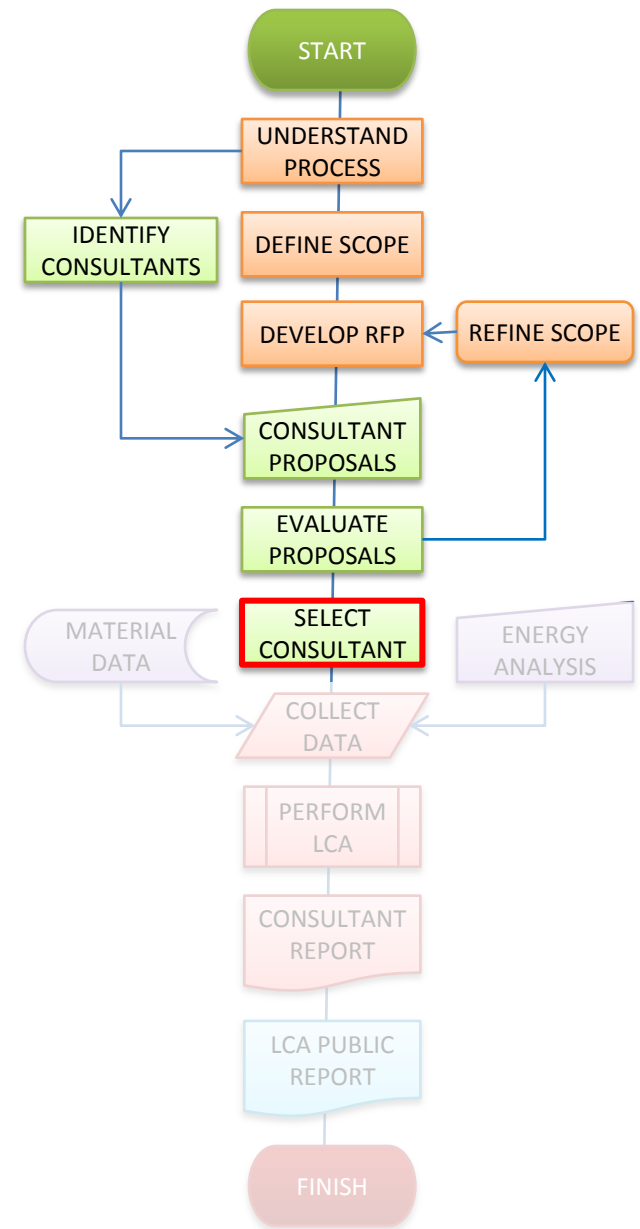
- Evaluate Proposals
- Refine scope to meet budget
- By February 1



Next Steps

Select Consultant

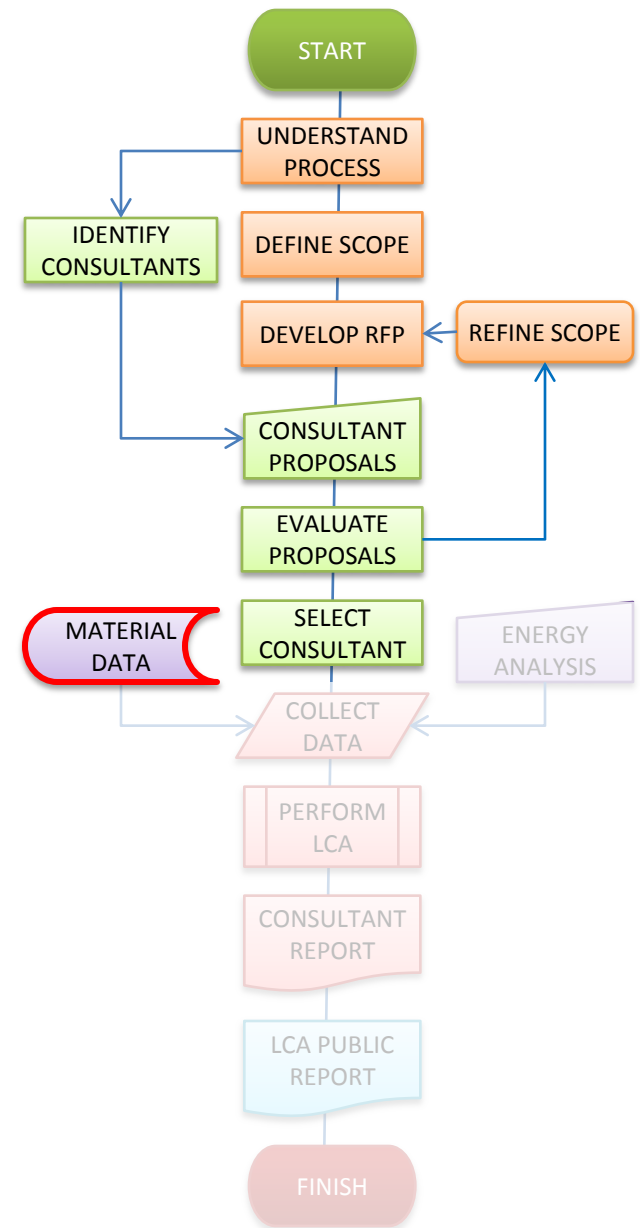
- February 15
- Begin Phase I work



Next Steps

Material Data

- Now
- Define generic formulations
- Provide manufacturing data to consultants



Questions?

