

Practicing Sustainable Manufacturing
Waste Beneficial Reuse and Biodiesel Production
Seneca AgBio Green Energy Park



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Initial Seneca AgBio Facility Operations Overview of Program

- **Integrated Closed-Loop Facility**
 - *Seneca AgBio Facility – Green Energy Park*
 - *Completed Infrastructure Rehab*
- **Commercial Production Operations**
 - *Initial Pilot-Scale Operations*
 - *Commercial Waste Processing / Grape Seed Oil / Biodiesel*
- **Successful Business Model**
 - *Flexible Operations – Multiple Products*
 - *Branded Businesses – Sustainable Manufacturing*

*Closed – Loop Facility Operations
Seneca AgBio Green Energy Park*

Implementing Our Philosophy :

Renewable Energy...+

New Agri-Businesses...+

Environmental Sustainability...

Because Our Future Depends Upon It

Practicing Sustainable Manufacturing Corporate Philosophies

- **Incorporate “Brownfields Redevelopment”**
 - *Site Selection @ Previous Industrial Facility*
 - *Infrastructure Rehab – Utilize “Green Practices”*
- **Develop “Green Energy Park” Concept**
 - *Apply Closed-Loop Utilities & Infrastructure*
 - *Attract “Like-Minded” Startups – Cost Avoidance*
- **Apply Waste Beneficial Reuse Concepts**
 - *Regional Wastes – Appropriate Product Feedstocks*
 - *Manufacture Useful Local “Green Products”*
- **Match “Savor Local” Culture w/ New Products**
 - *Local Supplies of Biodiesel Biofuels*
 - *First Finger Lakes Grape Seed Oil*

Integrated Biorefinery

“Seneca AgBio Green Energy Park”

- **Redevelop Former Seneca Army Depot**
 - *Productive Reuse – Green Energy & Job Creation*
- **Site Acquisition – Regional Green Energy Park**
 - *55-Acres – 400,000sf Buildings – Dedicated Rail Service*
 - *Multiple Renewable Energy and Agri-Businesses*
- **Supports Finger Lakes Regional Agriculture**
 - *Grape Seed Oil Processing + Wineries Waste Reuse*
- **Vertical Integration of Operations**
 - *Waste Oils Feedstock Processing*
 - *Biodiesel Production*
- **Attract “Green-Sector Manufacturing”**
 - *Complimentary Renewable Energy + Agri-Businesses*

Sustainable Manufacturing Business Model

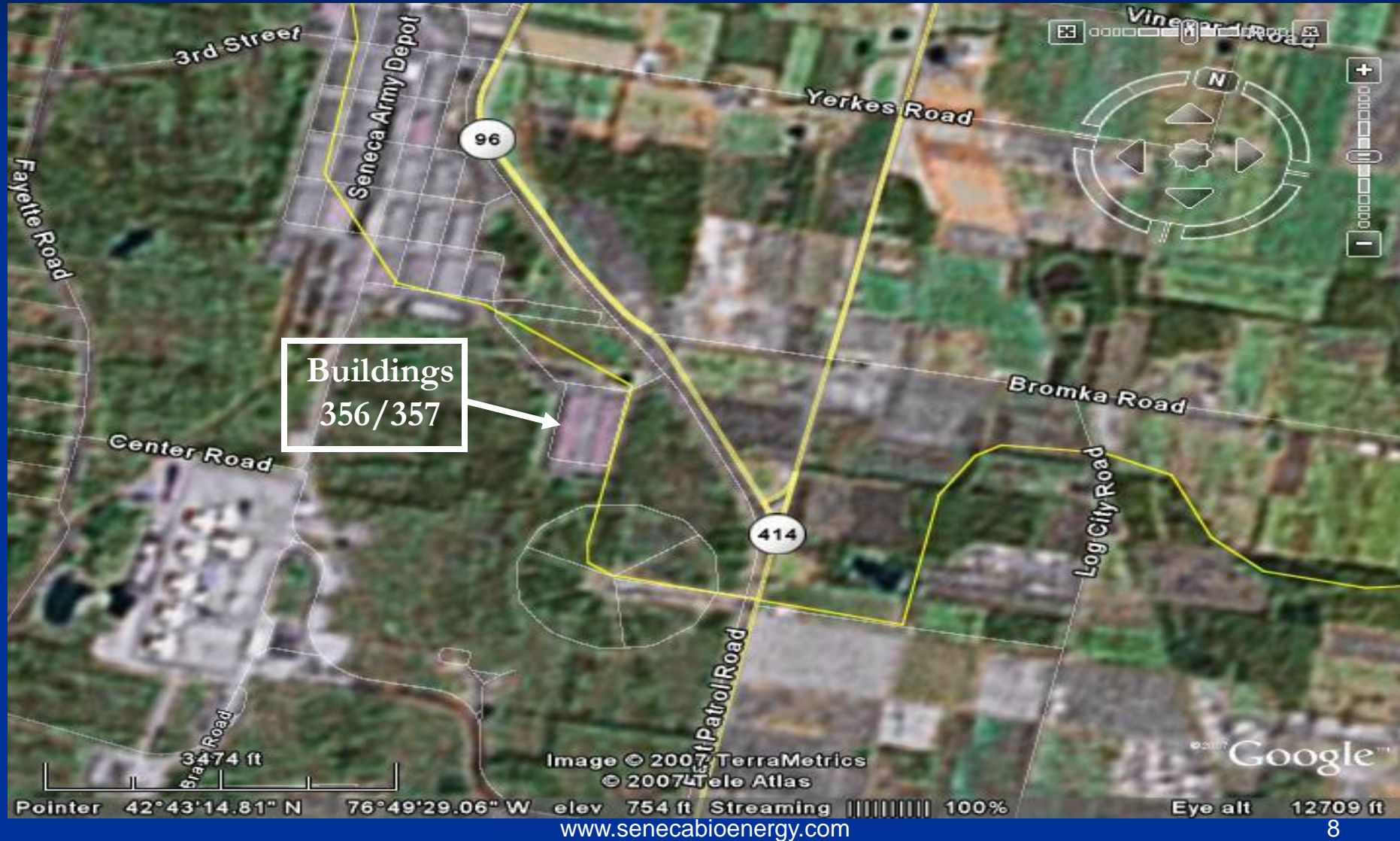
Seneca BioEnergy's Initial Operations

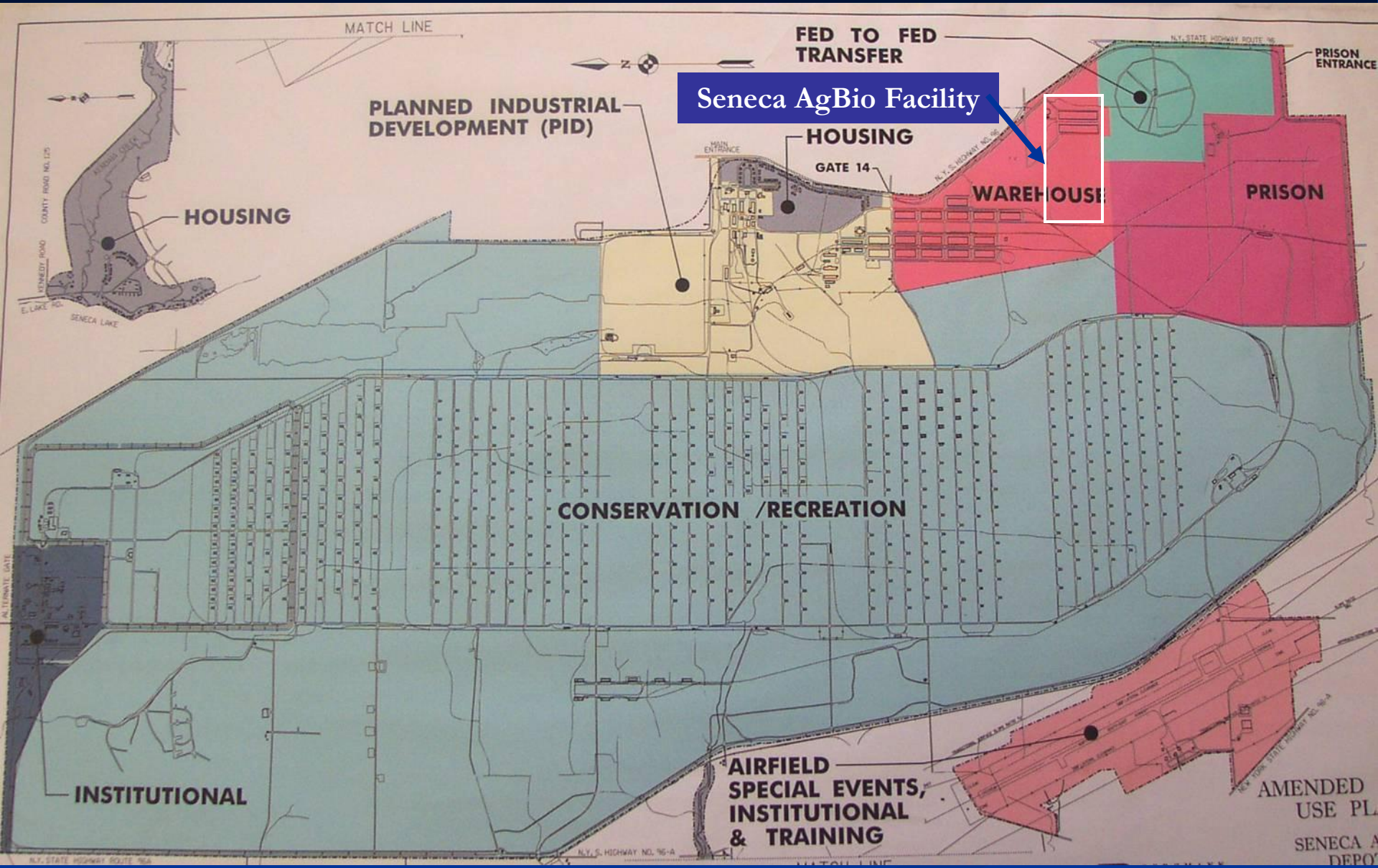
- **Site Location – Regional Agricultural Production**
 - *Local Wineries – Regional Biomass – Regional Rail*
- **Oilseed Production – Feedstock Supply**
 - *Vegetable Oil – Waste Vegetable Oils – Animal Feeds*
- **Biodiesel Production and Regional Distribution**
 - *Bus Fleets – Trucking Fleets – Home Heating Oil*
- **Pomace Processing – Grape Seed Products**
 - *Pomace Waste Processing – Grape Seed Separation*
 - *Regional Grape Seed Oils + Grape Extracts*
- **Environmental Stewardship**
 - *Solving Regional Agri-Business Environ Concerns*
 - *Waste Processing & Manufacturing Useful Products*

Former Seneca Army Depot Environmentally Sustainable Redevelopment

- **Former Army Depot Mission**
 - *WWII / Korean War Site Development (1940's – 1950's)*
- **Depot Storage and Transportation**
 - *Warehouse Storage Supplies – Igloos Storage Ammunition*
- **Ongoing Base Realignment and Closure**
 - *10-Year Environmental Cleanups & Property Conveyance*
- **Our Property Purchase – Seneca County IDA**
 - *1,000 Acres Warehouse & Industrial Zoned Areas*
 - *We Selected 55-Acre “Industrial Brownfield Site”*
- **Town of Romulus – Industrial Development Areas**
 - *Recently Zoned Areas “Renewable Energy Production”*

Former Depot Buildings #356 and #357 Zoned Industrial – Agricultural Rich Area





Building Reuse and Redevelopment

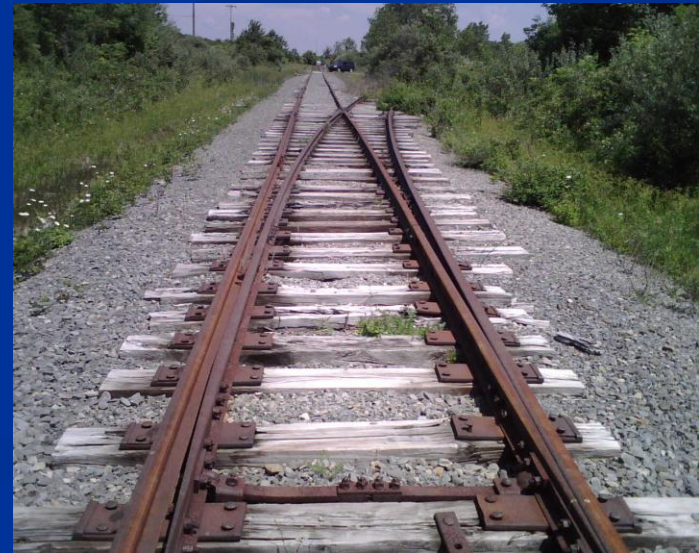
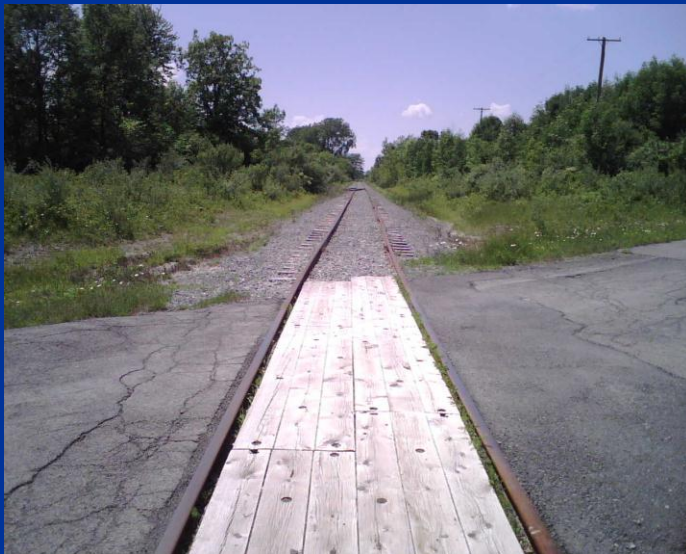
400,000sf Warehouses #356 & #357



cabioe

Roads & Dedicated Rail Infrastructure

Existing Capacities – Key to Reuse



24-Month Infrastructure Rehab Restore NY Program – Teamwork Success



Implementing Green Philosophies Require Support of Political Priorities



Facility Infrastructure Rehab Completed Manufacturing Space Ready for Equipment



Production Space and Offices Applied Sustainable Practices



Seneca BioEnergy, LLC
Commercial Production Operations

Grape Pomace – Environmental Sustainability

- Pomace Processing – ***“Grape Seed Separation”***
 - *Mechanical Processes / Screening Techniques*
 - *Multiple Wineries - Various Feedstocks*
 - *Heterogeneous Mixtures & Removal of Wastes*
- Food Grade Products – ***“Natural Products”***
 - *Grape Seeds Separation & Drying*
 - *Grape Seed Oil Pressing – Cold Press – Extra Virgin Oils*
 - *Lightly Filtered Grape Seed Oils – Varietals & Blended*
 - *Grape Extracts – High-Value Meal + Dried Pomace*
- Facility Process – ***“No Wastes”***
 - *100% Feedstocks Processed Into Natural Products*
 - *No Wastes for Disposal*

Biodiesel – Proven Biofuels

- **Biodiesel Production – “Waste Oil Processing”**
 - *Multiple Feedstocks – Vegetable Oils / Waste Grease*
 - *Removes Triglycerides – Produces Biodiesel*
- **Biodiesel Reaction – “Energy Efficient”**
 - *Overall Energy Net-Positive Operations*
 - *No External Heat Source – Produces Heat of Reaction*
- **Renewable Biodiesel Fuel – Blend with Petro-Diesel**
 - *Safe/Non-Toxic/Biodegradable/Reduces Air Pollution*
- **Environmentally-Safe Non-Flammable Biodiesel**
 - *High Boiling & High Flash Point / Low Vapor Pressure*
- **Certified Alternative Fuel**
 - *Produces ASTM Spec Biodiesel (B100)*

Biomass Combustion – Facility-Wide Heat

- AgBio Facility – *“Innovative Biomass System”*
 - *Regional Biomass Feedstocks*
 - *On-Site Processing Waste Wood & Biomass*
 - *Biomass Combustion – “Reduced Carbon Footprint”*
- Agricultural Products – *“Regional Biomass Farming”*
 - *Enhanced Agricultural Production*
 - *Biomass Equals New “Agricultural Cash Crop”*
- Facility Process – *“Process Heat”*
 - *Wood Chips Processing & Biomass Densification*
 - *Produces Biodiesel Process Heat*
 - *Produces “Food-Grade Dehydration Plant” Process Heat*

Winery Grape Press Operations Waste Pomace Generation and Hauling



Pilot-Scale Pomace Operations

Pomace Handling @ Seneca AgBio Facility



Commercial Pomace Deliveries Truck Loads @ 5-10ton Capacities



Pilot-Scale Pomace Operations

Pomace Processing & Seed Separation



Commercial Grape Seed Separation Screening @ 25tph Processing



Grape Seed Drying Operations

Dried Grape Seeds – Bagged Feedstocks



Pilot-Scale Grape Seed Operations

Screening / Pressing / Oils & Extract



Pomace Dehydration and New Products

Dried Grape Skins – Food-Grade & Healthy



Pilot-Scale Biodiesel Operations Equipment Construction



Commercial Biodiesel Construction Prepping for Large-Capacity Biodiesel



Our Branded Business Operations

■ Renewable Energy Production

- *Seneca BioEnergy, LLC*



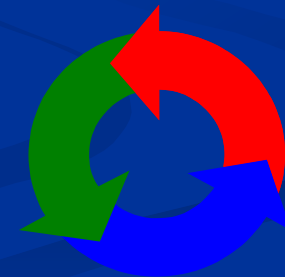
■ Natural Oils Production

- *Finger Lakes Natural Oils, LLC*



■ Environmental Sustainability

- *Applied Reclamation Techniques, LLC*



Seneca AgBio Summary – Win/Win/Win



- Unique Green Energy Project Creates “**Win/Win/Win**”
 - **Energy Win** – Biodiesel Production / Renewable Fuels
 - **Agricultural Win** – Supports Local Wineries / Farmers / Biomass
 - **Environmental Win** – Pomace Wastes / Renewable Feedstocks
- Comprehensive Regional Sustainability Benefits
 - Creates High-Wage Manufacturing Jobs
 - Supports Numerous Related Agricultural & Environmental Areas
 - Kick-Starts Sustainable Redevelopment of Seneca Army Depot
- Corporate Commitment
 - Good Local Citizen – Support Local & Regional Initiatives
 - *Solving Local Energy, Agricultural and Environmental Issues...
Because Our Future Depends Upon It*