RESOURCE RECOVERY AT TAJIGUAS

More recyclables, compost and energy through new technologies

CONTEXT FOR PROJECT

County Board of Supervisors supported expansion in 2002

Directed staff to research alternatives to landfilling and increase reuse and recycling of materials

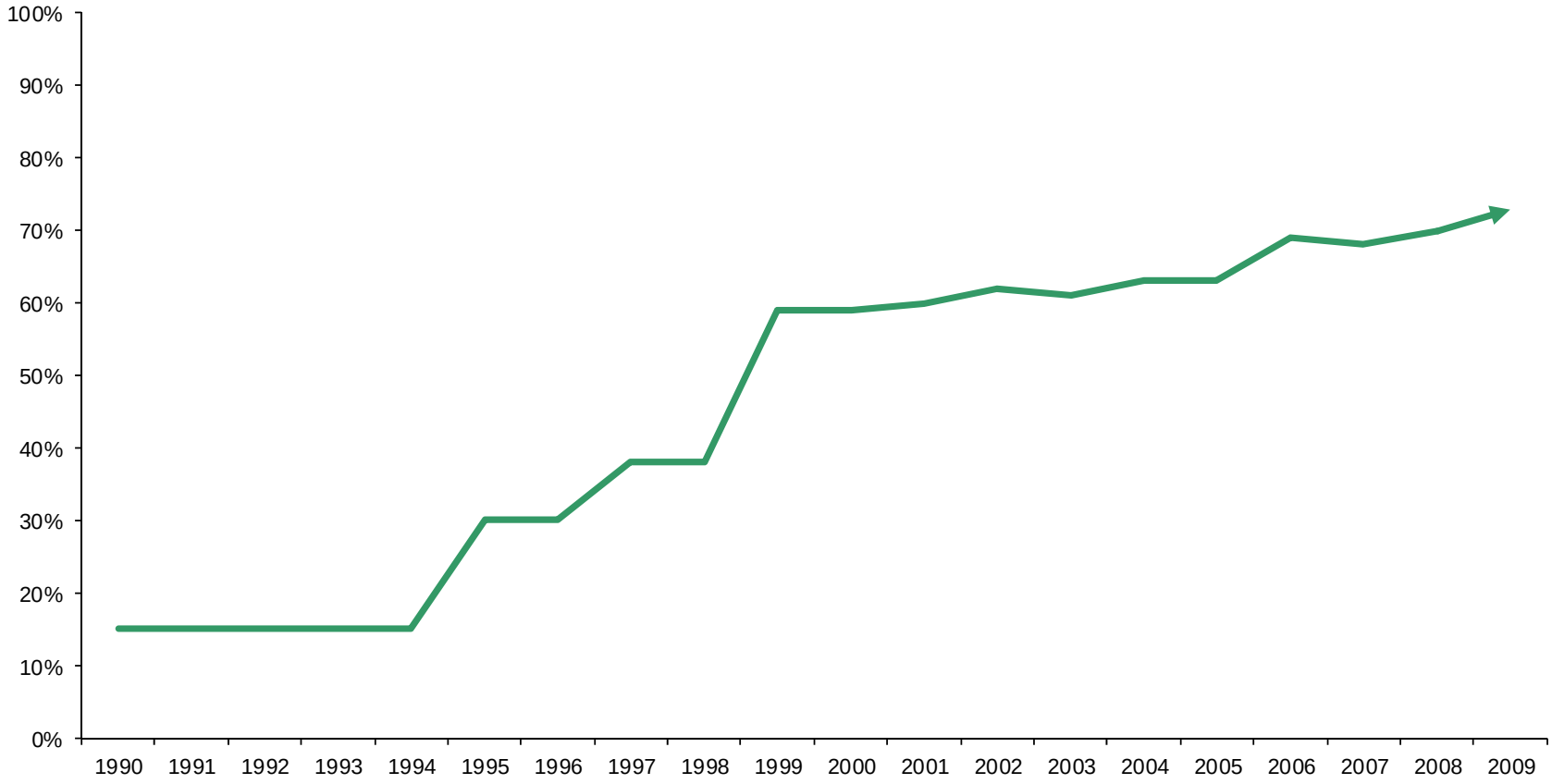
CONTEXT FOR PROJECT

Communities served by Tajiguas Landfill:

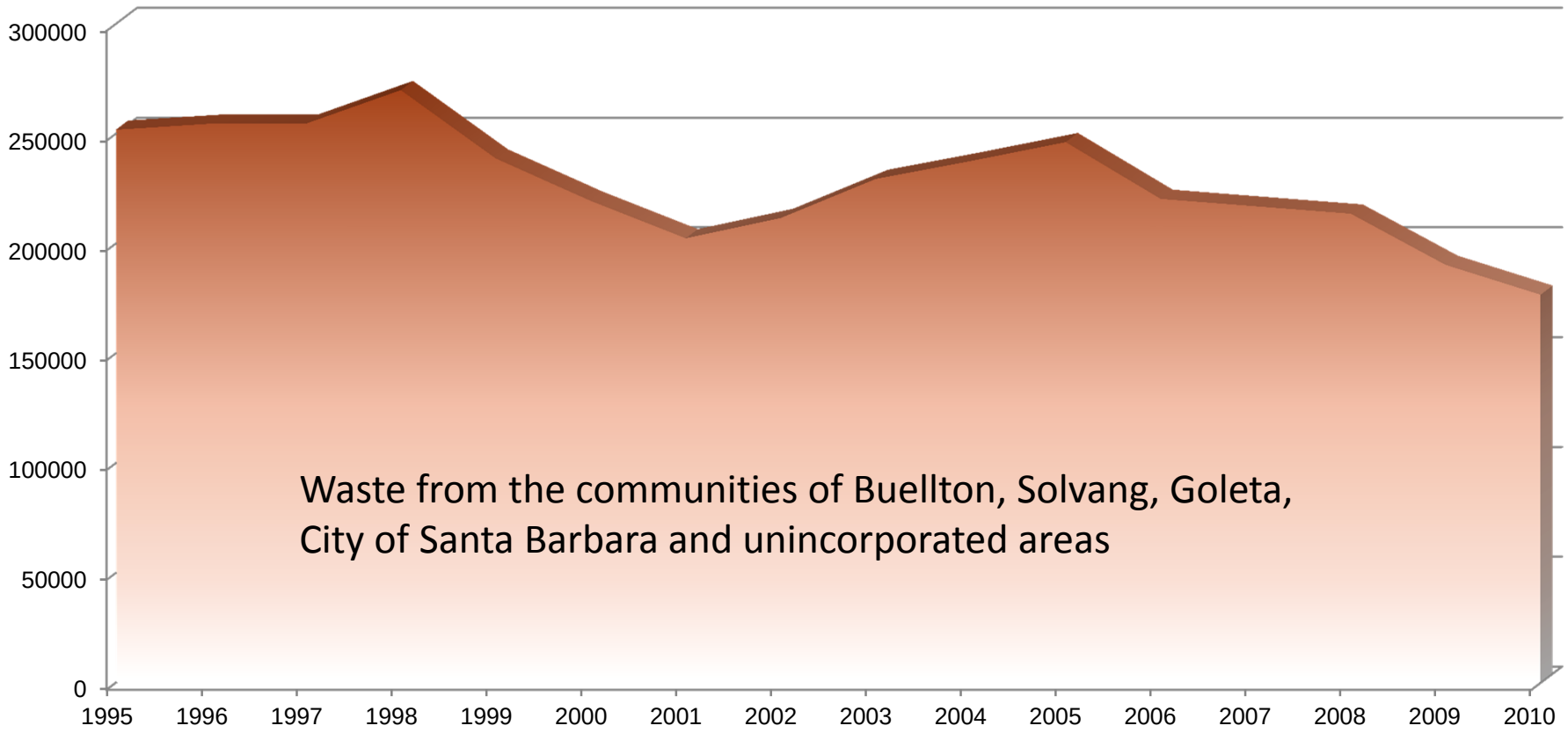
- County of Santa Barbara
- City of Santa Barbara
- City of Goleta
- City of Solvang
- City of Buellton

SUCCESSFUL DIVERSION PROGRAMS

Jurisdictions served by Tajiguas divert more than 70% of their waste from the landfill



TAJIGUAS LANDFILL DISPOSAL



WHAT WE NEED

… a way of managing the 170,000 to 200,000 tons per year that is still being buried.

But not a replacement for existing or planned recycling programs.

CONTEXT FOR PROJECT

Began process in 2007 to reduce reliance on landfilling

Resulted in recommendation that:

- Supports region's recycling goals
- Helps region to meet new state mandates through environmental improvements
- Provides for cost-effective 20-year regional waste management option
- Environmentally superior to alternatives such as exportation or maintaining the status quo

SUPPORTS REGION'S RECYCLING GOALS

Comprised of 3 facilities proposed at Tajiguas Landfill:

1. State of the art material recovery facility (sorts MSW for sale or further processing)
2. Anaerobic digester to process organics, extract greenhouse gases and convert to energy
3. Landfill remainder (less than 50%) thus doubling life of the landfill

SUPPORTS REGION'S RECYCLING GOALS

Opportunity to process material from existing and future recycling programs

- Commingled recyclables currently sent to Ventura
- Food waste currently sent to Santa Maria
- Flexibility to shift material from the trash can to the recycling, greenwaste, or potentially foodwaste containers

HELPS ALL JURISDICTIONS TO MEET UNFUNDED STATE MANDATES

- 20-year project
  (meets CalRecycle's 15-year disposal requirement)
- Potential to raise region's AB 939 diversion level to 80%+
  (meets AB 341 goal of 75% in 2020)
- Ability to eliminate greenhouse gas equivalent to 22,000 vehicles/year
  (AB 32 – greenhouse gas reductions by 2020)
- Ability to generate 1 megawatt of renewable energy
  (SB20 – 33% renewable energy by 2020)

COST-EFFECTIVE

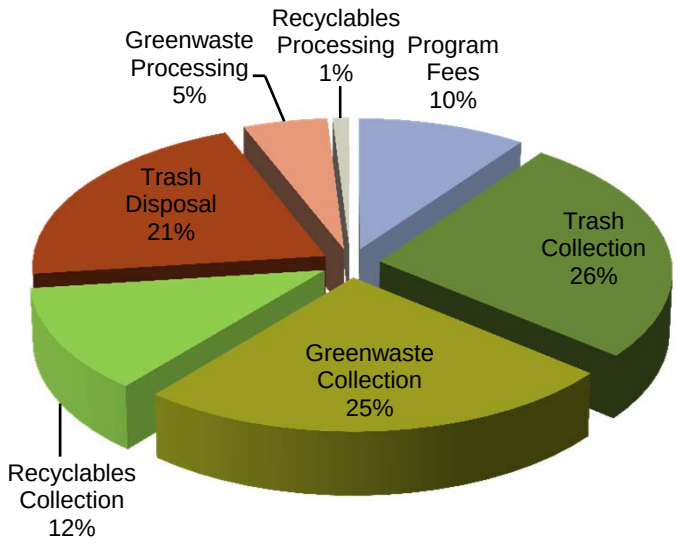
Current rates are comprised of:

1) Cost to collect
2) Cost to process/dispose
3) Fees

Disposal cost is between 21-33% of rate depending on jurisdiction

Proposed rates are comparable to projected future landfill costs thus creating no to minimal future increase to ratepayer compared to alternatives

Breakdown of a Typical $32.66 3-Can Trash Bill...



COST-EFFECTIVE

- **Based on current disposal fees, exporting our waste to another landfill, such as Santa Maria's proposed landfill would exceed $100 per ton**

- **Would not provide environmental benefits and ability to meet state mandates**

HISTORY OF PROCUREMENT PROCESS

- In 2007 BOS and City of SB directed staff to actively look into feasibility of alternatives to landfilling to serve the South Coast
- CT Subgroup to MJSWTG reinitiated and consisted of elected officials from each participating jurisdiction (guided staff with policy direction)
- Formed technical group including staff from each jurisdiction served (met regularly to develop project)
- Hired consultant and developed RFP for project including input from technical staff and CT Subgroup

HISTORY OF PROCUREMENT PROCESS

- January 2008: Goals approved by BOS and SB City Council
- May 2008: Feasibility report completed and provided to BOS and project deemed feasible
- Summer/Fall 2009: BOS and all Cities approve Letter of Support for the project
- October 2009: Released RFP to 11 vendors

ORIGINAL RFP GOALS

- ✓ Increase diversion of post-recycled MSW
- ✓ Reduce environmental impacts of landfilling MSW
- ✓ Provide financial feasibility and sustainability
- ✓ Production of green energy and other marketable products
- ✓ Provide a humane work environment
- ✓ Result in a long-term waste management plan (20 years)

- Emphasis on not affecting existing or planned recycling programs but management of MSW being landfilled

HISTORY OF PROCUREMENT PROCESS

- 2010: 4 companies responded (with 5 proposals)
- Early 2011: CT Subgroup approved staff recommendation that 2 companies did not meet local needs (IES and NRG)
- Summer to Winter 2011: CT Subgroup approved staff recommended vendor/project (Mustang Base Proposal)

PROJECT OUTREACH

Comprehensive and transparent outreach efforts since project initiation:

- Over 90 presentations in the last 4 years to area stakeholders
  - City Councils and Board of Supervisors
  - Public Official Forums
  - Multi-Jurisdictional Solid Waste Task Group
  - Environmental & Advocacy organizations
  - Business Groups
  - Regulatory Agencies
- Feedback received helped refine the project

COMMUNITY CHOICE

- Dedicated Website

  www.**ConversionTechnologyStudy**.com

- Overwhelming interest in doing more with our waste
  - Increasing recycling
  - Generating energy
  - Decreasing environmental impacts

- Concern with air emissions associated with thermal technologies and lack of comparable data

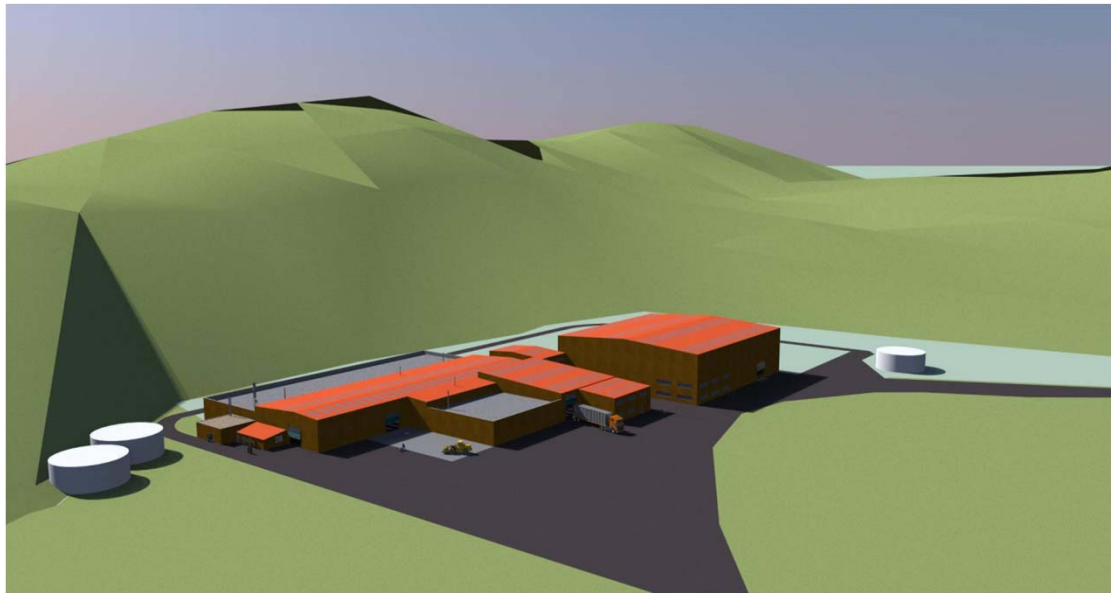
GASIFICATION – what we've learned

- Emerging technology
- Increased energy generation
- Significant reduction in need for landfills
- Need for more comparable air emission data
- Need for more clear permitting path
- Lack of community support
- Will continue to monitor feasibility in the future

COMMUNITY CHOICE

- **Recommended project**
  - State of the art material recovery facility
  - Enclosed dry fermentation anaerobic digester
  - Landfill residual

- **Current recommendation has strong broad-based support**



RECOMMENDED PROJECT
MUSTANG RENEWABLE POWER

Proposed project vendor: Dewey Group & Rossi Enterprises based in San Luis Obispo

Current business relationships

Proposed Firms:

1. Van Dyk Baler: design, engineer, manufacture, install and service material recovery facility equipment
2. Bekon Energy Technologies: provide, install and maintain anaerobic digester equipment

RECOMMENDED PROJECT
MUSTANG RENEWABLE POWER

Proposed Firms:

3. AJ Diani Building Corporation: construction of project - based in Santa Maria

4. Worley Parsons: project engineer

5. Westhoff, Cohen & Holmstedt: investment banker

6. Facility operator yet to be selected

RECOMMENDED PROJECT
MATERIAL RECOVERY FACILITY

- Material Recovery Facility to sort material in trash can
  - Recyclables (35%)
  - Organics (25%)
  - Trash (40%)
- At least 60% of what is buried is no longer landfilled
- Recyclables removed, baled and sold as commodities
- Opportunity to process source separated recyclables (blue can)

RECOMMENDED PROJECT MATERIAL RECOVERY FACILITY

Van Dyk Baler:

- Widely used all over the world
- Between 2007-2009 developed 5 facilities with average flow of 195,000 TPY
- Similar facility opened in San Antonio Texas in Nov 2011
- 12 other projects in the US in either the permitting or development phase with average flow over 200,000 TPY
- Recovery rates for this type of facility range from 50% to 70%
- Based on the 2008 waste characterization study we can expect to recover 60%

RECOMMENDED PROJECT ANAEROBIC DIGESTER (DRY FERMENTATION)

- Enclosed anaerobic digester to digest organics
- Approximately 25% of waste currently buried is organic
- Biogas (methane) is extracted from the organics and converted to energy
- Digested material can be cured to create a compost product
- Opportunity to process source separated food waste & other organics

RECOMMENDED PROJECT ANAEROBIC DIGESTER

Bekon Energy Technologies:

- Widely used in Europe (20 years of technical development)
- 16 commercial scale facilities in operation
- 10 others in planning or under construction
- Size of facilities range from 8,300-44,000 TPY
- Composting of MSW currently occurs in the US but not using AD facilities
- Dry fermentation anaerobic digestion technology also included in San Jose AD facility currently under construction

RECOMMENDED PROJECT CONSTRUCTION CONTRACTOR

AJ Diani

- Long term North County contractor (considerable work at Vandenberg AFB)
- $100M bonding capability

RECOMMENDED PROJECT TAJIGUAS LANDFILL

- Remaining waste to be landfilled (approximately 40%)

- Will more than double the life of the Tajiguas landfill permitted disposal capacity

FINANCIAL PLAN FOR PUBLIC/PRIVATE PARTNERSHIP

- Privately financed, built and operated: $48-$60M to construct
- 60% of funding from California Pollution Control Financing Authority
- Vendor paid through tipping fees at facility

  (proposed facility tipping fees comparable to future landfill fees)
- Operational portion of tipping fee to be adjusted annually by CPI
- Revenue from sale of energy and recyclables to offset tipping fee
  - Provision for sharing revenue over thresholds (windfalls)

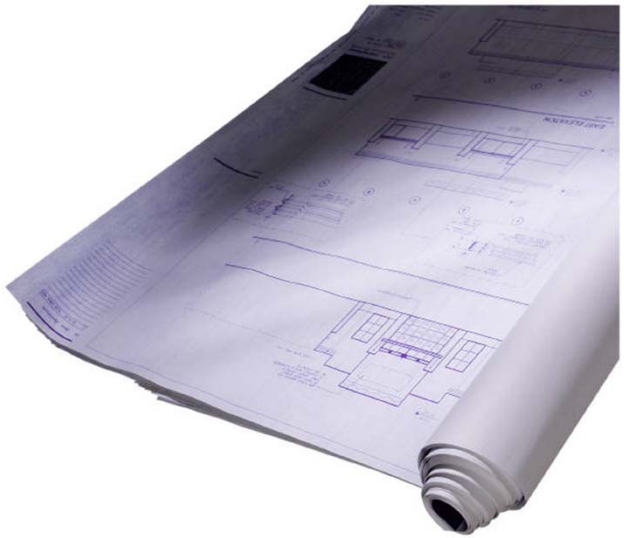
KEY PROJECT POINTS

20-year agreement

- Necessary to amortize capital costs
- Industry standard (collection contracts)

Performance requirements based on waste characterization (per Section 4.15 of RFP)

- Well defined performance standards
  - Termination provision based on performance specification
  - Diversion levels
  - Energy output level guarantee
  - Environmental compliance



KEY PROJECT POINTS

Commitment of material to facility

- Limitation of impacts
  - Tonnage sharing among jurisdictions
  - Periodic review and reset of material commitment or design for wider range (will affect cost)
  - Facilities to process source-separated commingled recyclables and organics which will mitigate shifts from the trash can to the recycling containers
  - Several options in rate setting (set rate at minimum delivery commitment, and overages banked for shortages)

CEQA REVIEW

- County to act as Lead Agency for CEQA Review
- The project is to further process material currently disposed of at Tajiguas Landfill using a MRF, AD and landfilling remainder
- Additional analysis will be done of processing source-separated recyclables and organics currently going to other facilities
- Will include analysis of alternatives to the project and discussion of alternative facility locations
- Recommend issuing RFP to identify consultant to prepare environmental document

RELATIONSHIP BETWEEN VENDOR & JURISDICTIONS DURING PROJECT DEVELOPMENT

Vendor Commitments:

- Agreed to pay for CEQA review
- Will provide technical information necessary to complete review

RELATIONSHIP BETWEEN VENDOR & JURISDICTIONS DURING PROJECT DEVELOPMENT

Jurisdiction Assurances:

- Develop term sheet between County (lead agency), potentially participating cities, and Mustang formalizing relationship

- Resolution of Intention to Participate in the project from all jurisdictions (if project goals are met)

RELATIONSHIP BETWEEN JURISDICTIONS

- **Create interagency agreement (Joint Powers Authority, etc.).**
  - Forum to evaluate contract provision modifications and regulatory changes
  - Ensuring fair representation
  - County to provide administrative and monitoring support

REGIONAL BENEFITS

- **20-year management plan**
- **Cost-effective compared to alternatives**
- **Supports regional recycling programs**
- **Helps to meet state mandates**
  - Over 80% AB 939 diversion rate
  - Elimination of greenhouse gas equivalent to 22,000 vehicles per year
  - Generation of 1 megawatt of renewable energy per year
- **Recommendation has broad-based community support**

TODAY'S RECOMMENDATIONS

Recommendations for BOS to:

- Endorse the recommended resource recovery project
- Direct staff to initiate CEQA review of project and designate RR&WMD as Lead Agency
- Direct staff to develop a term sheet to be approved by County and Mustang to formalize Mustang's offer to fund the environmental review
- Authorize Chair to send requests to each Mayor of the participating cities to adopt a resolution indicating their continuing interest in the project
- Direct staff to eliminate from consideration the other proposals submitted as part of this procurement process

NEXT STEPS

Mar/Apr 2012: Other jurisdictions to pass resolution of Intention to Participate

Apr/May 2012: BOS to:

- Approve project description and award of CEQA contract
- Approve term sheet with Mustang to fund CEQA analysis
- Approve recommended interagency legal structure and provide direction to develop the necessary interagency agreements

2012: Development of interagency agreement

2012/2013: Development/review and certification of CEQA document

NEXT STEPS

2013: Formation of JPA or recommended legal structure

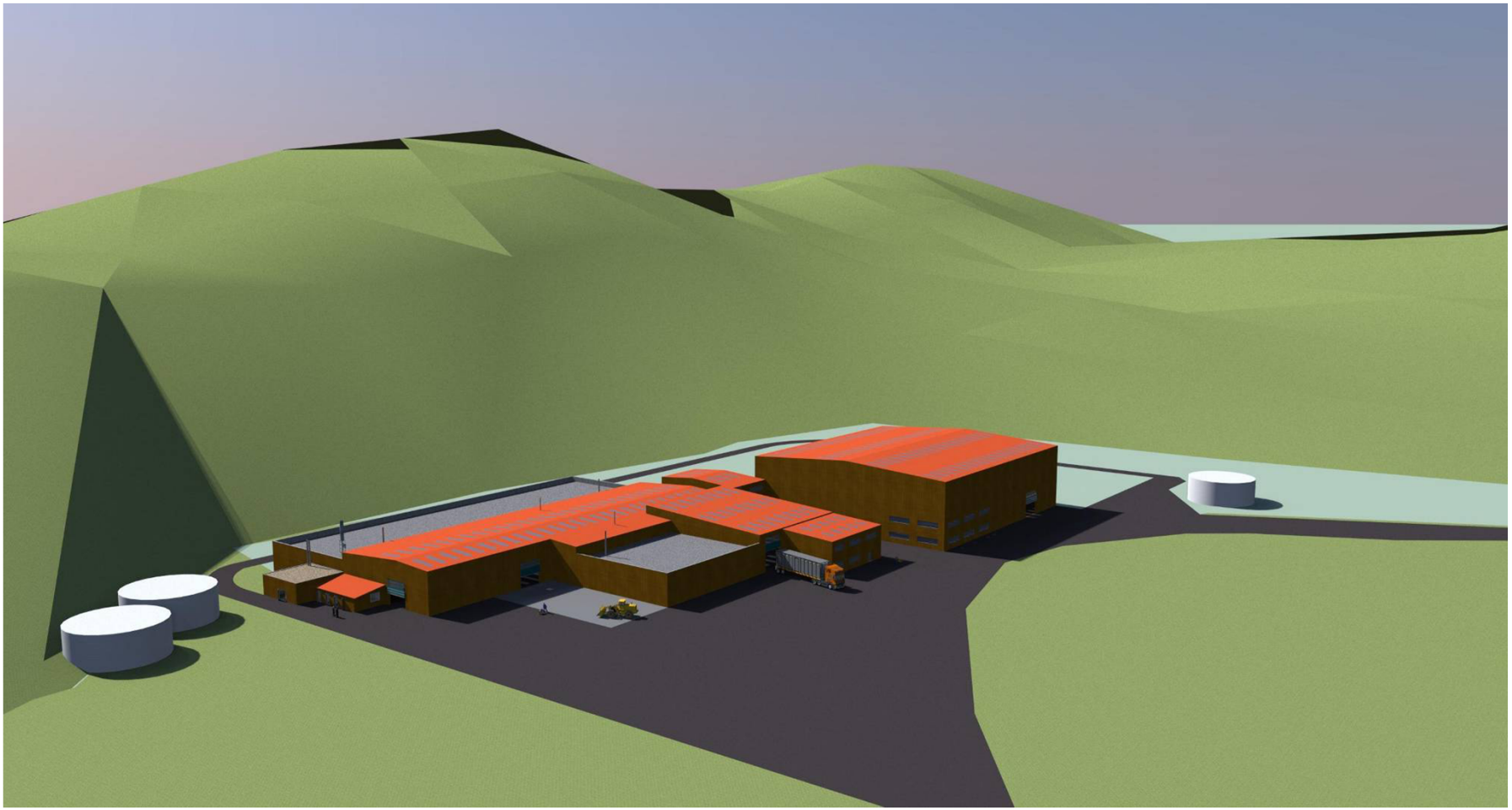
2013/2014: Contract negotiations with Mustang

2013/2014: Jurisdictions to approve agreements with JPA

2014/2015: Mustang to obtain permits, finalize design and costs, obtain financing

2016: Mustang to construct, install, commission, and start up facilities

THANK YOU
QUESTIONS?



www.CONVERSIONTECHNOLOGYSTUDY.com