

US EPA ARCHIVE DOCUMENT

SOUTHERN NEVADA FOOD & ORGANICS RECOVERY WORKSHOP

FINAL REPORT & ANALYSIS



MAKING A VISIBLE DIFFERENCE IN
SOUTHERN NEVADA

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EPA's Making a Visible Difference in Communities Website

www.epa.gov/smartgrowth/making-visible-difference-communities

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SOUTHERN NEVADA FOOD & ORGANICS RECOVERY WORKSHOP

Food waste can be affected dramatically if we move from "nice to do" to "need to do." It is all about changing the mental and policy mindset.

Darwin Bosen, Three Square

BACKGROUND



According to the U.S. Environmental Protection Agency (EPA), the amount of food Americans throw away each year is staggering. In 2013 alone, more than 37 million tons of food waste was generated, with only five percent diverted from landfills and incinerators for composting.

EPA estimates that more food reaches landfills and incinerators than any other single material in our everyday trash, constituting 21 percent of discarded

municipal solid waste. Additionally, the U.S. Department of Agriculture (USDA) reports that Americans wasted over one third of the vegetables and fruit bought in 2010. Other pressing facts about food waste in America and Southern Nevada include:

- Food waste at the retail and consumer levels was valued at more than \$161 billion in 2010.
- Only about 5% of food scraps are composted.
- Statewide, food recovery in Nevada decreased by 34,000 tons in 2014.
- 58% of children in the Clark County School District are enrolled in free and subsidized meal programs based on family income.

On September 16, 2015, U.S. EPA and USDA announced the first ever national food waste reduction goal, calling for a 50% reduction by 2030

- Much wasted food is wholesome, edible and could instead be donated to those in need.
- Once in landfills, organic materials like green waste, wood and food breakdown and produce methane, a potent greenhouse gas 25 times more powerful than CO₂, which contributes to climate change.

WORKSHOP SUMMARY

OVERVIEW

On September 30th, 2015, as part of the **EPA's *Making a Visible Difference in Communities*** initiative, a Southern Nevada Food and Organics Recovery Workshop was hosted by the U.S. EPA, the Nevada Department of Environmental Protection (NDEP), the Environmental Finance Center West (EFCWest) and the Regional Transportation Commission (RTC) of Southern Nevada, in Las Vegas.



This workshop brought together 36 representatives from the private sector, government agencies, non-profit organizations and academia to explore opportunities and barriers to the recovery of wasted food and other organic wastes generated in Southern Nevada.

A list of attendees is included in **Appendix A**.

The workshop commenced with a variety of presentations on the following topics that aligned with the Food Recovery Hierarchy presented above.

- State of the Food Waste Problem,
- Source Reduction Practices,
- Excess Food to People,
- Food Scraps to Feed Animals,
- Industrial Uses and Anaerobic Digestion, and
- Composting.

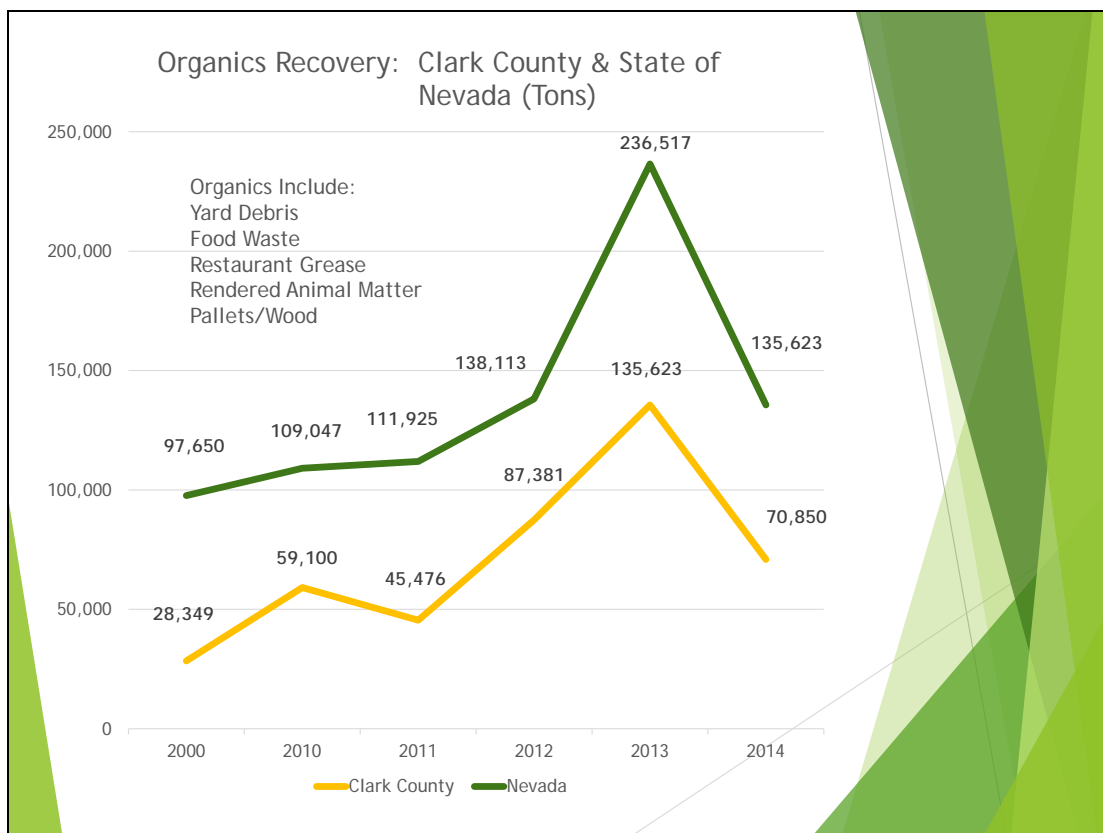
Breakout groups followed the presentations, where participants discussed two critical questions on current activities and opportunities to increase food recovery in Southern Nevada.

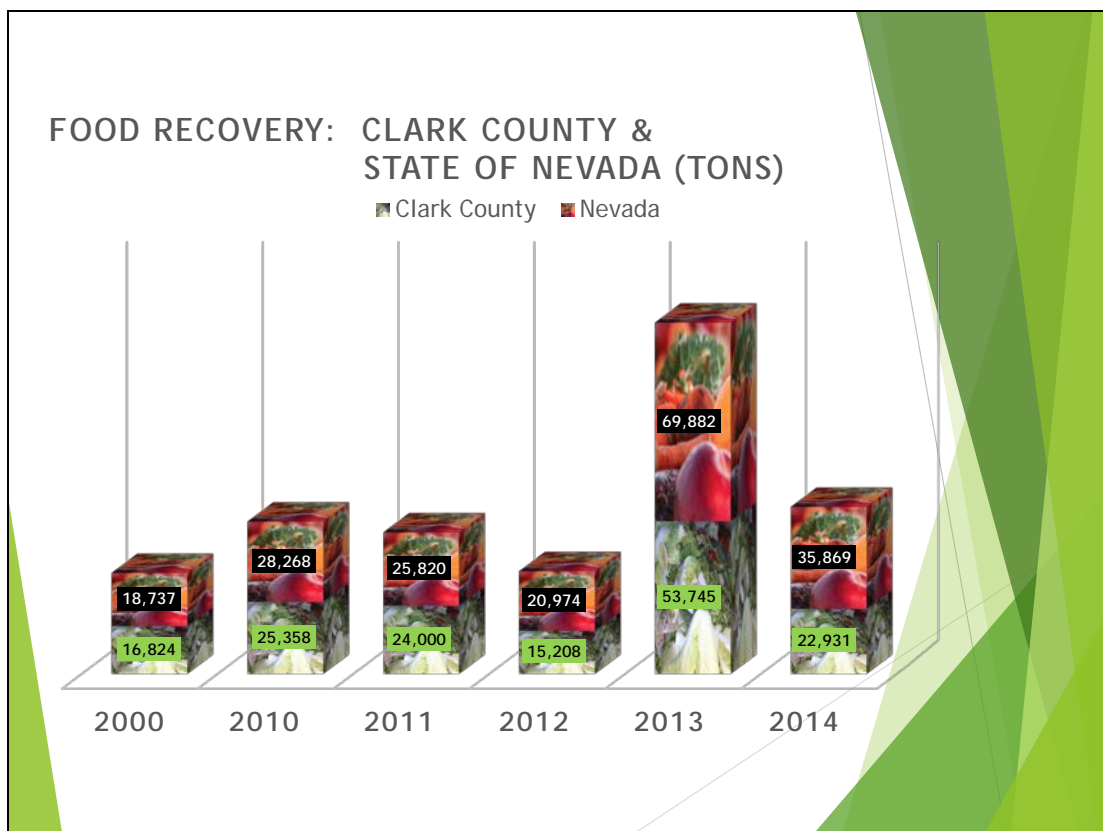
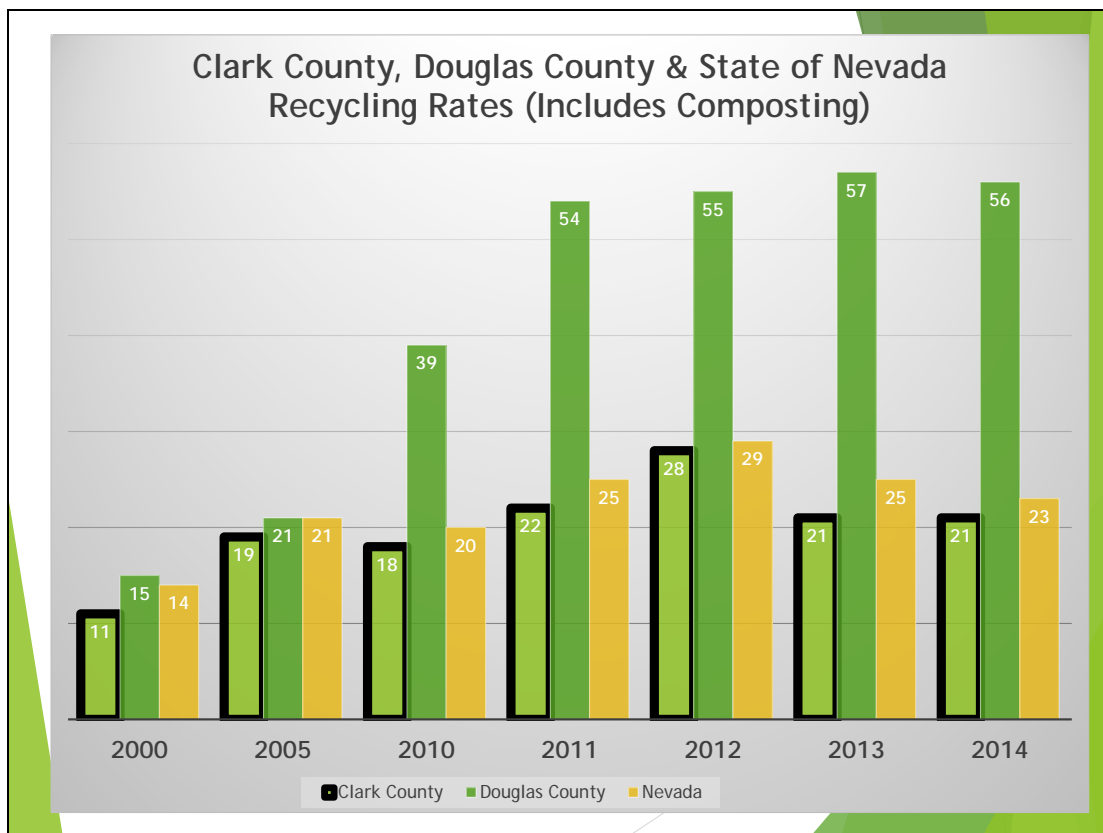
The final activity was a participant multi-vote on priorities to reduce food waste and increase organics recovery in Southern Nevada. The top four priorities identified by workshop attendees were to develop:

1. Affordable, permitted compost facility that can handle larger volume food scraps that cannot be donated.
2. Education and outreach (including training, guides, apps, etc.)
3. Simple, scalable solutions that can be expanded to large-scale programs across multiple locations
4. Food Donation: Donor engagement and "consumable food/use by" date comprehension

STATE AND LOCAL DATA

The following posters at the workshop shared Nevada Division of Environmental Protection data on state and local recycling rates, food recovery and disposal trends.





OUTCOMES

Overall outcomes from the discussion groups focused on five target areas: education, infrastructure, economic incentives, funding, and policies and regulations.

The biggest challenge for food rescue is that people don't understand that food expiration dates are actually quality dates and that rescued food is safe.

Education: Participants agreed that there was a significant need for increased public education and awareness of wasted food and recovery opportunities. Specific discussions focused on public understanding of "expiration dates" as well as on convincing food managers that Good Samaritan Laws protect them from potential lawsuits that may stem from food donations. Participants also expressed a need for a repository of information on food donation and composting in Southern Nevada.

Infrastructure: Both internal and external infrastructure is essential for a thriving food recovery industry. While there is a strong food donation network and a pig farm animal feeding operation, both could be expanded. Currently, there are no permitted food waste composting or anaerobic digestion facilities accepting food scraps in Southern Nevada to handle food that cannot be donated or used for animal feed. Donors often lack policies and structures within their restaurants and food preparation facilities to separate and store perishable excess food while waiting for pickup. Most communities lack viable food and organic waste collection capacity.

Economic Incentives: Concerns were expressed over the quality of compost. . In addition, it was recognized that due to low landfill disposal costs, it may be cheaper for resorts, restaurants and casinos to dispose of their food waste instead of donating or composting it. The economic incentives for food recovery need to be improved.

Funding: Food recovery infrastructure is expensive, especially on a large scale. Processing and transportation equipment, as well as costs associated with meeting environmental regulations make it difficult to enter the market. Local pantries and other food recovery organizations are often nonprofit organizations with tight margins. For them, facilitating free food donation incurs costs for pick up, management and delivery, which can ultimately reduce the number of meals provided per donation dollar.

Policies and Regulations: In the past, the Southern Nevada compost industry has at times suffered from poor quality controls. Policies, labeling programs, testing and specifications concerning compost quality are expanding. Some

states and communities have laws and regulations that prevent the disposal of food waste in landfills, but there are currently no food waste reduction goals or policies in Southern Nevada.

PARTICIPANT SLIDES

Participants were invited to submit slides before the workshop to share their greatest achievements and barriers to food and organics recovery. The following slides include all submissions received, but do not represent every organization that participated in the workshop.





228,540 tons
Cardboard

8,198 tons
Plastic Bags

19,573 tons
Animal feed

84,655 tons
Compost

31 tons
Aluminum

134,494 tons
Misc. Recycle

= 475,491 tons

- ▶ **Greatest Accomplishments**
 - ▶ 2014 Recycling Results for Safeway/Vons/Pavilions
 - ▶ 2014 Food Donations for Safeway/Vons/Pavilions:
 - ▶ More than 72 million pounds of food = ~59 million meals
 - ▶ Recognized by Feeding America as a "Visionary Partner"
- ▶ **Greatest Barriers**
 - ▶ Affordable, permitted compost or digestion facilities that can handle larger volume food scraps that cannot be donated
 - ▶ Simple scalable solutions that can be expanded to a large-scale program across multiple store locations
 - ▶ Affordable transportation/logistics options

Making a Visible Difference in Southern Nevada





Project AngelFaces



- Clark County NV's only organization dedicated to Reducing local food waste since 2005
 - NEIGHBORHOOD FRUIT HARVEST PROGRAM harvested and shared over 75,000 lbs. of locally grown food directly with hungry elders and youth since 2005
 - SUSTAINABILITY SYSTEMS diverted over 50,000lbs of non-animal organic matter (food scraps, yard waste) from landfills into compost since 2007
- **Greatest Barrier:** lack of adequate support for or engagement in our programming.
 - Seniors can't get transport to farmers markets.
 - Lacking infrastructure to expand composting services countywide.

Making a Visible Difference in Southern Nevada



- ▶ **Greatest Accomplishments**
 - ▶ 2014 - Donated **26,678 pounds of shelf-stable, sealed food stuffs** to Three Square Food Bank
 - ▶ Working to revise federal school lunch program definition requiring "serving" food (which was often discarded) to "offering" food
- ▶ **Greatest Barriers**
 - ▶ Scaling up to implement food recovery programs across 367 schools serving 320,000 children
 - ▶ Cost-effectively replacing Styrofoam trays with biodegradable or recyclable options

Making a Visible Difference in Southern Nevada



Photo of Recent Compactor Audit
Conducted in Las Vegas

► Greatest Accomplishments

- In 2014, Caesars Entertainment diverted over 10,000 tons of organic material from landfills (all U.S. properties)
- Active programs include composting, anaerobic digestion, farm feed, and donations.
- Bringing on food waste at a mid-west property led to over 80% monthly waste diversion

► Greatest Barrier

- Lack of permanent solution for food waste diversion in Nevada

Making a Visible Difference in Southern Nevada



City of Las Vegas Water Pollution Control Facility



● Greatest Accomplishments

- Reduce the wastewater solids by 50-60 percent with Digesters
- Sustainable – Digesters produce Bio Gas (Methane) to run Blower Engines and Boiler reducing Natural Gas or Electricity usage

● Greatest Barriers

- Equipment Maintenance & Feeding Balance
- Safety Hazards/CAPP - Biogas – Methane (odorless, colorless) Hydrogen Sulfide (become desensitized)

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Clark County Department of Aviation



Food/Organic Waste Management, McCarran International Airport

- ▶ **Greatest Accomplishments**
 - ▶ HMSHost, Airport Master Restaurant Concessionaire
 - ▶ 7,200-gallons of grease/cooking oil for biodiesel
 - ▶ Daily delivery of meals to USO
 - ▶ Daily pick up of meals by Salvation Army
 - ▶ CCDOA Warehouse: ~600 wood pallets reused/repurposed (year-to-date)
- ▶ **Greatest Barriers**
 - ▶ What to do with coffee grounds?
 - ▶ What to do with kitchen-prep food wastes?
 - ▶ Lack of affordable, permitted compost or digestion facilities for food scraps
 - ▶ Logistical issues related to airport security/storage/pick-up locations

Making a Visible Difference in Southern Nevada



BIEP
Nevada Business
Environmental Program
Assisting Nevada businesses since 1986

Nevada Business Environmental Program

- ▶ **Greatest Accomplishments**
 - ▶ For 26 years, we have provided free and confidential environmental assistance throughout the State of Nevada.
 - ▶ BEP provides training, on-site consultation, assistance over the phone and through its website and publications.
- ▶ **Greatest Barrier**
 - ▶ Lack of food/biomass recovery options for clients

Making a Visible Difference in Southern Nevada



Ocean Spray Cranberries

► Greatest Accomplishments

- Reclaim water project—bottle rinser (use water in non-production capacity—cooling towers) 12% of annual water consumption savings, or 12-15MM gallons of water!
- Early stages of increased recycling and an end goal of going landfill-free!
- Donated over 13,000 bottles of juice to various organizations in 2014.
- Recent efforts to send high strength waste juice to composter.

► Greatest Barriers

- Facility capabilities to monitor and divert juice to appropriate storage for composting.
- Locations for disposal of non-consumable juice.

Making a Visible Difference in Southern Nevada



High Strength Waste Tanks



Regional Transportation Commission



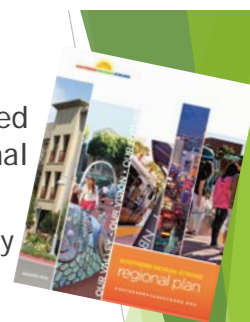
► Greatest Accomplishment

- Southern Nevada Strong Regional Plan (developed by Henderson with input from public and regional partners)
 - Supports increase of regional solid waste recovery and reduction of landfill contributions
 - Identifies other objectives to: Improve Economic Competitiveness and Education; Invest in Complete Communities; and Increase Transportation Choice

► Greatest Barriers

- Identifying and matching resources for implementation
- Identifying and supporting local champions

Making a Visible Difference in Southern Nevada





Las Vegas Sands Corp.



► Greatest Accomplishments

- All the food waste is used as animal feedstock at the local pig farm. All the green waste and compostable service ware is composted at a local composting facility. Only compostable service ware is used for convention business.
- Donated over 120,000 meals to local food banks in the last 18 months
- Implemented robust food waste tracking systems, food digesters, food waste committees, purchasing practices etc.

► Greatest Barriers

- Engaging tenants and constantly educating Team Members to change their behavior to reduce food waste and prevent contamination
- Reducing food waste from banquets and educating meeting clients & attendees
- Lack of permitted compost and waste-to-energy facilities for food scraps

Making a Visible Difference in Southern Nevada



Southern Nevada Group

• Greatest Accomplishments

- Filed 8 lawsuits against the Reid Gardner coal fired power plant and worked with state legislators to require its closure
- Offered outings and service trips with credentialed leaders, several every month, for the last 50 years
- Engaged in state and federal legislative campaigns last 20 years

• Greatest Barriers

- The number of volunteers with courage and persistence
- Clark County locked itself into a 20-year contract with Republic Services a number of years ago
- Small waste management operators find it difficult to compete

Making a Visible Difference in Southern Nevada



Office of Chronic Disease Prevention & Health Promotion



Van Dyke Farms at the Las Vegas Farmers Market

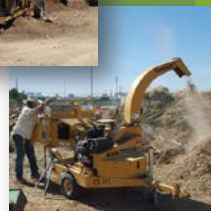
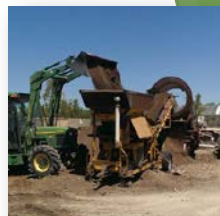
- ▶ **Greatest Accomplishments related to Food System**
 - ▶ Helped local farmers markets accept SNAP/EBT benefits in a variety of locations throughout the valley.
 - ▶ Supports the Southern Nevada Food Council via meeting facilitation, monthly updates to its members/supporters and technical assistance.
- ▶ **Greatest Barriers related to Food System**
 - ▶ Most current farmers market locations not in high SNAP beneficiary neighborhoods.
 - ▶ SNFC is challenged to engage more members of the local food system.

Making a Visible Difference in Southern Nevada



Springs Preserve

- ▶ **Greatest Accomplishments**
 - ▶ Successful recycling of Organic Waste on site at the Springs Preserve and Desert Demonstration Garden for over 20 years.
 - ▶ Participated in the Southern Nevada Christmas Tree Recycling effort since 1990.
 - ▶ Donated several hundred yards of high quality Organic Compost to local Community Gardens and Farms.
- ▶ **Greatest Barriers**
 - ▶ Lack of sufficient funding to obtain the equipment and facilities necessary to take the program to the next level.
 - ▶ Permitting of operation to allow retail of Recycled Organic Waste Products.



Making a Visible Difference in Southern Nevada



THREE SQUARE Food Rescue

► Greatest Accomplishments

- In 2014 we were able to rescue over 13 million pounds of consumable food from our donors such as retailers, wholesalers, and “big box” stores
- With these generous donations the donors had an opportunity to claim millions of dollars in tax deduction and save on landfill costs

► Greatest Barriers

- Donor engagement and “consumable food” comprehension
- Donor employee participation

Making a Visible Difference in Southern Nevada



UNLV



UNLV President's BBQ -
Zero Waste Event

► Greatest Accomplishments

- Zero Waste Events
- Zero Waste Football Game Day Challenge Wall of Fame
- Green Event Certification

► Greatest Barriers

- Lack of Large Capacity Community Compost Facilities
- Struggle to start a food donation program
- Not knowing if materials are really being composted

Making a Visible Difference in Southern Nevada



US Composting Council



- ▶ **Greatest Accomplishments**
 - ▶ Providing a unified voice for the composting industry
 - ▶ The only national trade association dedicated solely to increasing compost manufacturing
 - ▶ Hosts the largest annual gathering of compost manufacturers and related professionals—Jan 25-28, 2016 in Jacksonville, FL
- ▶ **Greatest Barriers for growth in the Las Vegas area**
 - ▶ Lack of policies prioritizing composting and a diversified Infrastructure
 - ▶ Competition with cheap disposal

Making a Visible Difference in Southern Nevada

WORKSHOP PRESENTATIONS



The Workshop began with a series of presentations and videos. An overview of the presentations is provided here. Links to the videos shown and presentation slides are included in **Appendix B**.

1. OPENING REMARKS

Raymond Hess

Director of Planning, Regional Transportation Commission (RTC) of Southern Nevada

Summary: The RTC is currently the designated organization coordinating regional partners involved with the Southern Nevada Strong Initiative. Funded by a \$3.5 million Department of Housing Sustainable Communities grant, a diverse regional stakeholder group is working on a regional plan focused on the sustainability of the region (economic, social and environmental impacts).

Accomplishments

- Transit enhancement on the Maryland Parkway
- LV Medical District growth due to legislation
- Boulder Highway - mixed-use approach
- Down Town North Las Vegas – Awarded a \$485k Choice Neighborhoods grant to redevelop subsidized housing areas.

Note: The Southern Nevada Regional Plan

[www.southernnevadastrong.org/files/managed/Document/378/SNS-Plan-final-print.pdf], published in January 2015, was a factor in receiving this grant award, and can be referenced to support food recovery efforts and funding requests.

The Southern Nevada Strong Regional Plan specifically calls out the opportunity to:

“Promote resource-efficient land-use and development practices by increasing regional solid waste recovery and reducing landfill contributions.”

Specifically, the Plan’s Objective 5.8, Increase Regional solid waste recovery and reduce landfill contributions, includes the following points:

5.8.2 Encourage franchise agreements to pilot and implement a composting program.

5.8.3 Introduce regional composting pilot program utilizing the EPA-supported best practices for establishing a composting program.

Tara Pike

Solid Waste and Recycling Manager, University of Nevada, Las Vegas

Summary: The UNLV Food waste program was started in 2009 as a student project. By 2014, 200 tons of food waste was gathered annually from all of the dining facilities. The campus has a growing number of Zero Waste events (90% and above of event waste diverted), participates in the Zero Waste Hall of Fame for Game Day Challenge and utilizes “green certifications” to change the culture. Zero Waste events require extensive preplanning to identify vendors and places for waste diversion. Green debris has become a challenge to manage due to the closure of the A1 Compost Facility in 2014.

Accomplishments:

- Every ounce of garbage at the Welcome BBQ event (5000 students) was recycled
- In 2012 UNLV had one Zero Waste football game with a 96% diversion rate and was recognized by the Game Day Challenge Zero Waste Hall of Fame <http://gamedaychallenge.org/zw/>
- Steady increase in the number of Green Certified events

Dave Emme

Administrator, Nevada Division of Environmental Protection (NDEP)

Summary: The NDEP is the state environmental regulatory agency and employs recycling coordinators for both southern and northern Nevada. NDEP has regulated both successful and failed compost facility operations in the state and is working to facilitate the development of more successful food recovery operations and other recycling establishments. Mr. Emme is a backyard composter and an advocate for reducing wasted food.

Zoe Heller, Zero Waste Section Manager, U.S. EPA Region 9

Summary: If there was a 15% reduction in food waste we could feed 25 million Americans per year. What can we do together to achieve that goal? EPA's Food Recovery Challenge [www.epa.gov/foodrecoverychallenge] works with many Las Vegas area partners such as UNLV, Safeway/Albertsons, MGM, and Sprouts Markets. We invite other Southern Nevada businesses and organizations to join this free challenge.

The Las Vegas region is one of Region 9's ***Making a Visible Difference in Communities*** focus areas. This event is one of several events EPA is organizing in the area. It is a zero waste event with compost and recycling bins!

Important Statistics:

- 133 billion pounds of "waste" equates to 161 billion dollars in value and affects both resource conservation and food security
- Food at 21% is the single largest material disposed of in landfills, contributing to the generation of methane, which is a GHG 25 times more powerful than CO₂
- Wasting food also wastes the energy and resources required to process the food, transport it and water it
- 80-90% of all water consumed in the U.S. each year is used for agricultural purposes. By wasting 30-40% of all food, we are also wasting a huge amount of water, which is especially concerning at a time of intense drought in our region1 in 5 families are food insecure so there's a strong need to focus on recovering edible food

2. THE CURRENT STATE OF THE PROBLEM AND THE STATUS OF FOOD RECOVERY

Timonie Hood

Zero Waste Coordinator, U.S. EPA Region 9

Summary: The reduction of consumption in the country is on a positive trend. Nationally, the recycling rate is 35% and food makes up 21% of the materials being wasted in landfills and incinerators.



Trends include landfill bans and mandatory recycling and composting requirements in some parts of the country. Anaerobic digesters are being utilized by a growing number of wastewater treatment plants to process food scraps along with sewage and generate renewable energy. Plastics are growing in the waste stream and are common compost contaminants.

Support Services:

The EPA provides resources to support food recovery outreach, such as infographics, measurement information, and greenhouse gas calculators. Additional information is available at:

www.epa.gov/smm

www.epa.gov/smm/advancing-sustainable-materials-management-facts-and-figures-report

<http://www3.epa.gov/warm/>

Rachel Lewison

Southern Nevada Recycling Coordinator, NDEP

Summary: NDEP provides technical assistance, works with schools to reduce waste, and tracks state and local government recycling data. Students and schools are participating in recycled art contests and in the Clark County Green Schools Summit this November.

Clark County Food Recovery in 2014 was down 48% (135,623 tons in 2013 to 70,850 tons in 2014) largely due to the closure of the A1 Organics compost facility, which had been accepting food waste for composting. There is not a permitted food waste compost facility currently operating in Southern Nevada.

The state recycling rate fell from 29% in 2012 to 25% in 2013 and 23% in 2014. This is below the state's 25% goal. Clark County's recycling rate dropped from 28% in 2012 to 21% in both 2013 and 2014. By comparison, the Nevada county with the highest recycling rate (including a strong composting effort), Douglas County, had a 55% recycling rate in 2012, a 57% recycling rate in 2013 and a 56% recycling rate in 2014.

Clark County's declining recycling rate pulls down the state's recycling rate because most of the state's population (~ 75%) resides in Clark County.

Accomplishments:

- NDEP works with numerous local partners to support annual Southern Nevada Christmas Tree Recycling
- It took 20 years to achieve the state's 25% recycling goal and Clark County accomplished the goal as well; but in recent years, both the state and Clark County recycling rates have fallen below the 25% goal.

Support Services:

NDEP Southern and Northern Nevada Recycling Coordinators provide technical assistance on solid waste reduction, and the Southern Nevada Recycling Coordinator is located in Las Vegas. The state also operates the Nevada Recycles website and hotline:



3. SOURCE REDUCTION OF WASTED FOOD WASTE

Amanda Hong

Food Recovery Specialist, U.S. EPA Region 9

Summary: EPA's Food Recovery Challenge has more than 800 participants and endorsers nationwide. Food service businesses and institutions are invited to participate in the Challenge, and entities who work to reduce food waste are invited to endorse it. <http://www2.epa.gov/sustainable-management-food/food-recovery-challenge-frc>

Ongoing participation in the Challenge requires participants to report the amount of food waste prevented, donated and/or recycled in a given year. Participants are also asked to set goals for each category for the next year. To

help participants reach these goals, EPA provides complimentary technical assistance, a data management system, and recognition and award opportunities.

EPA also developed a Reducing Wasted Food and Packaging Toolkit that can help food service organizations track and reduce food and packaging waste and the associated costs. Step-by-step tutorial guidance to conducting a waste assessment and implementing reduction strategies is provided along with the spreadsheet tracking tool and PDF guide to reducing wasted food and packaging. <http://www2.epa.gov/smm/sustainable-materials-management-smm-web-academy-webinar-series-step-step-guide-conducting>

Support Services: Technical assistance and other benefits are available to Food Recovery Challenge participants. Annual awards are given to participants with outstanding results. Learn more and sign up at:

<http://www2.epa.gov/sustainable-management-food/food-recovery-challenge-frc>

Tools and resources are available to support food waste reduction. A number of assessment and audit tools are provided for the public's use at:

<http://www2.epa.gov/sustainable-management-food/tools-assessing-wasted-food>

4. EXCESS FOOD TO FEED HUNGRY PEOPLE

Darwin Bosen

Director of Operations, Three Square

Summary: The biggest challenge for food rescue is that people don't understand that food expiration dates are actually quality dates and that rescued food is safe. Food insecurity does not necessarily mean people who don't have food. It

To grow and sustain your community you need to feed the children properly.

is about people who are not eating, not eating regularly or not eating healthy foods. One in five people in the nation are food insecure.

Wasted food can be avoided. You can freeze everything except for produce. A dollar donated equals 3 meals, and

Three Square's goal is to increase the number of meals per donation dollar.

Accomplishments:

- Maintain over 1,300 community partners
- Serve over 137,000 individuals monthly including 54,000 children and 19,000 seniors
- In 2014 distributed more than 34 million pounds of food and grocery product

- Banquet foods recovered at The Sands resulted in 119,000 meals
- Afterschool and breakfast childhood nutrition program meals are nutritious and meet all USDA nutritional guidelines

5. EXCESS FOOD AND SCRAPS TO FEED ANIMALS

Bob Combs and Dirk Ravenholt

Founder and Owner-Operator; Spokesperson and Lawyer, RC Farms

Summary: RC Farms is a part of a complete sustainable food circle where food scraps go back into the food cycle. MGM sent 7,600 tons of food to the farm from just one of their properties. Hotels generate so much food that it is wasted before it is even served. In one case, poor planning and lack of education caused 100 extra pork tenderloins to be cooked but they never reached the serving plates.

*The Las Vegas
strip is RC
Farms
cornfield!*

If each town were to adopt a small community farm, we as a society would benefit. There would be reduction in landfill sanitation and fuel costs. Food scraps would become part of the food cycle and buying local would be possible. We should not use the term “food waste” because food is a resource that should never be wasted.

RC’s goal is to demonstrate that a small agricultural facility can help feed the hungry and create savings.

Comments and Recommendations:

- Competition between casinos to become green facilities is bolstering the recycling efforts.
- We need to change the mindset of the general public too. Wasting food should not be hip.
- Consumers need to tell restaurants we only need half portions. The restaurants won’t mind. It saves money in production.
- Eating is not a fashion show but a way to take care of our body. Ugly food is edible.
- Pretty fruits and vegetables have the same nutritional value as ugly ones.

*Waste is a
resource out of
place!*

6. INDUSTRIAL USES AND ANAEROBIC DIGESTION OF FOOD SCRAPS



Laura Giuliano

Environmental Laboratory & Compliance Manager, City of Las Vegas, Environmental Division

Summary: At the Las Vegas facility solids are collected from the water by screening, chemicals and aeration. More and more solids are removed through each step of the process. The biggest challenge is what to do with the solids after treatment – currently they go to landfill. The City may consider co-digesting food waste along with the solids in the future.

This could produce more methane gas to run the digesters, but would require implementation of significant operational and safety practices.

Digester Overview:

- Digesters reduce size and volume of solids
- Digesters produce a biogas that is 40-60% methane
- Methane runs the blower engines to produce oxygen
- Digesters provide a more sustainable production of natural gas
- Feeding digesters must be consistent
- Input must be pumped into digesters because no oxygen is allowed inside
- One digester manages 720k gallons of sludge
- The solid digestate end product currently goes to the landfill

7. COMPOSTING FOOD SCRAPS

Cary Oshins

Director of Education & Annual Conference, U.S. Composting Council (USCC)

Summary: In the U.S., there are roughly 5,000 composting facilities. The bulk of composting facilities generally handle yard materials; many are now interested in adding food or other organic waste. The USCC recommends a new Institute for Local Self-Reliance report "The State of Composting in the United States" which touches on markets and barriers to growth. Other important information includes the following.

- Source separated organic material prevents contamination when compared to mixed organics

- Food is a wet resource. When used for composting, additional dry material (brown leaves, woody material, etc.) is required
- Active composting kills diseases through the heat it generates
- Feedstock processed in an anaerobic digester creates biogas for energy or fuels
- Composting is expensive, requiring access to capital, land and adherence to regulations
- Composters believe that there is an un-level playing field with pig farmers when competing for food waste
- Cheap disposal rates at the landfill and lack of "Pay As You" Throw policies work against food waste diversion
- Lack of collection infrastructure for food waste is a problem

If you want food recovery, embrace the farmers.

Dane Buk

Founder and Owner, Terra Firma Organics

Summary: Terra Firma is a Wyoming-based company that has projects in Utah, Wyoming and Nevada focusing on the management of co-generation and difficult feed stocks. Terra Firma purchased the closed A1 Organics Compost site because Southern Nevada has poor soil and there is little access to good compost. Some of the composting issues in Nevada include:

Without a market, compost is just a new color of trash.

- Limited regulation
- Composters need to produce quality products, and our company is committed to producing quality compost
- The Las Vegas region has markets but if the product is poor, it cannot be used as a true soil amendment
- Currently bio-solids are shipped from California rather than sourcing them in Nevada
- There is plenty of food currently being wasted in Southern Nevada to support more food recovery at every level – food for donation, pig feeding and composting.

WORKSHOP BREAK-OUT SESSIONS

Breakout sessions to discuss and report on key themes were held in both the morning and afternoon. The following questions were discussed among the participants.

1. What source reduction, food donation and/or animal feeding activities is your organization currently doing and what opportunities do you see to increase these activities in the future?
2. What industrial or composting activities to reduce organic waste are your organizations currently undertaking and what opportunities do you see for increasing industrial uses and composting in southern Nevada?

The following tables provide a review of the discussions and answers to the questions above.

WHAT SOURCE REDUCTION, FOOD DONATION AND/OR ANIMAL FEEDING ACTIVITIES ARE BEING DONE BY YOUR ORGANIZATION?

| Organization Type | Activities |
|---|---|
| Government | |
| City of Henderson | <ul style="list-style-type: none"> Involved in breakfast program with two elementary schools |
| City of Las Vegas Water Treatment Plant | <ul style="list-style-type: none"> Maintains digesters Exploring the viability of receiving food waste to capture methane gas |
| Southern Nevada Health District | <ul style="list-style-type: none"> Work at the policy level to support all aspects of food system to feed more people |
| City of Las Vegas Sustainability | <ul style="list-style-type: none"> No food recovery program yet There is a pilot program at city hall where employees are composting Getting education out there to the public |
| Private Sector | |
| Albertsons Supermarkets | <ul style="list-style-type: none"> Constantly working to understand inventory: what is coming into and out of stores Excess food is sent from the stores to food pantries |

| Organization Type | Activities |
|---------------------------------|---|
| McCarren Airport | <ul style="list-style-type: none"> Restaurants and airplane food/meal supply firms are primary food waste generators HMSHost as Master Restaurant Concessionaire oversees the restaurants and most other food vendors at the airport Over 90,000 food items donated to the Las Vegas Rescue Mission in 2014 31,000 food items, although still fresh but beyond the "sell by the same date prepared" company policy, were donated in 2014 to the USO lounges at the airport 7,200 gallons of grease/used cooking oil is used for bio-diesel Wood pallets are recycled/repurposed. LSG Sky Chefs used to send food scraps to A1 Organics until the facility stopped operating until the facility stopped operating |
| Ocean Spray Juice | <ul style="list-style-type: none"> Going landfill free by waste segregation and sending organics to Terra Firma Currently working with the US Composting Council Zero waste events at conferences is their goal |
| RC Farms | <ul style="list-style-type: none"> RC is working on a program with others to handle the food scraps in Las Vegas Worked with Nevada resort employees so they sort the table waste for food recovery collection RC works with composters and brings compost back to the farm for a closed loop RC goal is to show that operations similar to RC can be done in towns with 10,000 people |
| Education | |
| University of Nevada, Las Vegas | <ul style="list-style-type: none"> Uses source reduction waste events to train students not to waste food Food waste education is provided at the UNLV dining hall, buffet and commons area Donating food to humans is a challenge, not much is currently being done Food waste is sent to RC Farms |

| Organization Type | Activities |
|--------------------------------|---|
| Clark County School District | <ul style="list-style-type: none"> Serves 90 million meals a year - cafeterias generate 90% of the schools waste School administrators are educated on food rescue food management practices Many schools work with Three Square to provide children dinner after school Anything sealed and shelf stable is placed in a share box for donation Goal is to recycle 10K pounds a month. Source reduction efforts include replacing Polystyrene trays with recyclable trays Cost is a huge factor- an increase of 1 cent/meal increases total costs by \$1 million Not all food gets eaten (on a carrot day, uneaten, perfectly good carrots fill a 32-gallon bin) Talking to various companies to explore food diversion Source reduction/donating food reduces disposal costs - saves \$5 million /year |
| Nonprofit Organizations | |
| Springs Preserve | <ul style="list-style-type: none"> Produces good quality compost Challenge is purchasing good quality (expensive) processing equipment Preparing to launch a food waste recovery and composting program on site (they are looking for help and resources for that program) |
| Angel Faces | <ul style="list-style-type: none"> Grass roots efforts with homeowners/property owners to harvest residential and other non-commercial produce Maintains a compost service Develops gardens built with repurposed materials to support vulnerable populations Shares the harvest with elders etc. and with existing food service providers |
| Three Square | <ul style="list-style-type: none"> Provided 34 million pounds of food to 1300 community partners in 2014 Maximize efficiency to make the best use of all of the food that is donated Leverage food and transportation infrastructure to get more to the community |
| Teton Conservation District | <ul style="list-style-type: none"> Working with Terra Firma to take over the A1 back end operations in Las Vegas |

WHAT OPPORTUNITIES CAN BE IDENTIFIED TO INCREASE SOURCE REDUCTION

| Opportunities & Barriers |
|---|
| Internal and External Policies and Regulations |
| Clark County School District is involved with rewriting regulations, so schools are required to offer certain types of food instead of required to serve food (regardless of whether or not a child wants it). This will significantly reduce the amount of food waste and costs. |
| As part of internal policies, Ocean Spray reclaims processed water to reduce water usage as a source reduction opportunity |
| For source reductions to occur there needs to be a shift in the internal culture at the management level, among higher decision makers and all personnel to change the perceptions of food, its appearance, proportion sizes, waste, etc. |
| Reducing food waste and rescuing food should become part of the internal culture of the schools |
| South Nevada Health District wants food serving organizations to revise internal policies so that smaller portions are served |
| Infrastructure |
| Better infrastructure is needed to expand the reduction of food waste and food rescue to all 370 Clark County schools. |
| Getting food from schools to Three Square is a logistical nightmare |
| Health District provides educational materials, such as a public directory with information on recycling drop off locations and the types of items that can be received. |

WHAT OPPORTUNITIES CAN BE IDENTIFIED TO INCREASE FOOD DONATIONS?

| Opportunities and Barriers to Increase Food Donations |
|--|
| Internal and External Policies and Regulations |
| Some organizations may need internal policy changes to provide donations |
| Need to work with the food system at the grocer and policy levels to make it easier and possible for food seconds (1day past expiration) to be donated |
| Infrastructure |
| City of Las Vegas is implementing a food waste program starting with cafeterias and restaurants, employee groups and the water district |
| MGM Corporation has expressed an interest in food donations. A great partnership between MGM and the Health District is developing |
| Logistically there may not be enough food rescue groups able to receive the food from local food generators, UNLV or Albertsons. Maybe there are more food rescue non-profits in town? |
| Education |
| Need to clearly communicate the Good Samaritan Law to increase donations. |
| Education on the expiration date of food products will be an ongoing effort to change perceptions and fears |
| Shifting public opinion and policy regarding expiration date and food viability is an opportunity for change. This date is a quality measure |
| EPA's household and community food waste reduction toolkit: "Food Too Good to Waste" should be used |
| Need an agency in southern Nevada to promote and teach people about EPA program |
| Need to educate public, volunteers and agencies to adopt actions based on "eat what we grow, grow what we eat, use what we have" |
| South Nevada Health District maintains a business education program to educate food generators. |
| City of Las Vegas education program promotes the message to school students that visit the City |
| Identify and document the variety of organizations able to receive and disperse food, what food types they accept and under what conditions, to help organizations and businesses to take the appropriate actions. |

WHAT INDUSTRIAL OR COMPOSTING OPPORTUNITIES DO YOU SEE IN THE FUTURE?

| Opportunities and Barriers to Industrial Uses and Composting | |
|--|--|
| Infrastructure | |
| Need to find more composting recipients for food waste donations | |
| Need a place to send food related items such as paper plates, napkins cups etc. | |
| Can't get campus to be zero waste without a place to accept packaging | |
| Infrastructure (large scale food waste collection production) is the biggest challenge | |
| There is a lot of plastic waste in the pig business. Why not an edible digestible wrapper? | |
| A smaller decentralized compost facility is an opportunity. Maybe the public would have a use? | |
| Funding | |
| Labor and transportation costs are incurred to collect food for rescue or compost | |
| Plant based utensils are expensive and we also need a place to send these items | |
| Purchasing quality compost equipment is expensive | |
| Composting can be expensive, requiring access to capital, land and environmental compliance | |
| Should shift business model toward operations that are user and economically friendly | |
| Education | |
| Education on what should go where and who is accepting what is key | |
| Should educate landscape architects on using compost products and water saving opportunities | |
| Educate people that the best compost fertilizer is a pig | |
| Waste is a resource out of place: don't use the word waste with the public | |
| Internal and External Policies and Regulations | |
| Need compost specifications for government use | |
| Need standard that composters have to abide by | |
| Contractor and landscaper oversight is necessary so they adhere to standards | |
| Cities should encourage more community composting | |
| Compost as a carbon sequestration tool may allow access to the carbon credit market | |
| Should implement BMPs to keep nitrogen out of the ground water | |
| Market | |
| Encourage "Local Use" message campaigns (locally used and manufactured) | |
| Get nurseries to buy into and keep it local | |
| The Biggest concern is utilizing what is generated (there is occasional excess) | |
| Should pursue State DOT to use compost as erosion material | |
| Filter blankets made of compost can be used for erosion & pollution control | |
| Use compost in National Parks and sensitive sites | |
| Use specific compost blends for native plant communities | |

PARTICIPANT VOTING RESULTS

Following the breakout discussions, the final activity of the day was a participant vote on 11 future priorities to reduce food waste and increase organics recovery in Southern Nevada. Each participant was given 3 stickers to identify their priorities and could place all stickers by one priority or choose up to three. The 11 priorities were determined through pre-workshop participant submissions as well as ideas raised in the workshop. The results of the voting are presented below. The Priority and Total columns record the number of votes for each concept.

| Future Concept Priority Ranking | | | |
|---|--------------|----------|-------|
| Concept | Top Priority | Priority | Total |
| Affordable, permitted compost facility that can handle larger volume food scraps that cannot be donated | 9 | 6 | 15 |
| Education and outreach (including training, guides, apps, etc.) | 6 | 11 | 17 |
| Simple scalable solutions that can be expanded to large-scale programs across multiple locations | 5 | 2 | 7 |
| Food Donation: Donor engagement and consumable food/"use by" date comprehension | 4 | 4 | 8 |
| Higher disposal costs or diversion incentives | 0 | 8 | 8 |
| Affordable, permitted digestion facility that can handle large volume food scraps unable to be donated | 0 | 6 | 6 |
| Logistical issues related to security, storage and pick-up locations | 0 | 4 | 4 |
| Non-combustion organics and municipal solid waste or fuel facility | 0 | 3 | 3 |
| Assurance that materials are really being diverted | 0 | 3 | 3 |
| More regulation of facilities | 0 | 0 | 0 |
| Food donation: Donor employee participation | 0 | 0 | 0 |

ANALYSIS FOR FOOD RECOVERY IN SOUTHERN NEVADA

The workshop information above has been synthesized into a practical and actionable assessment for the stakeholders. The analysis assesses strengths and weaknesses as well as opportunities and threats.¹

The following is the beginning of an exploration of a **Southern Nevada Food Recovery and Composting Initiative**. It should be a living document with input from new and existing stakeholders to build a more thorough evaluation.

In general, this analysis demonstrates that, internally there are many existing strengths for this Initiative. There is a clear and real business case for food rescue and composting and many local organizations and businesses are already engaged in food waste diversion and composting. That said, limited collection and distribution infrastructure as well as poor marketing and lack of educational efforts are serious weaknesses that need to be addressed.

There are also multiple opportunities, from social and green incentives in casinos to the lack of food security in the region that can serve as a driver for new programs and policies. However, these opportunities may be offset by numerous threats such as the limited permitted processing facilities and inexpensive landfill disposal.

| |
|--|
| Strengths: For Food Recovery in Southern Nevada |
| There is a Business Case for Wasted Food Reduction, Rescue and Composting |
| ▪ Reduction in purchasing, disposal, labor and wage costs |
| ▪ Generation of energy and revenue |
| ▪ Sustainability and Greenhouse Gas Reduction branding |
| ▪ Employee engagement and retention |
| Food-Focused Organizations and Partners Already Exist |
| ▪ Compost (currently green waste): Terra Firma, Springs Preserve |
| ▪ Food Recovery: Three Square, Angel Face |
| Strong Programs to Change Food Management Behavior Already Exist |
| ▪ EPA Food Recovery Challenge |
| ▪ NDEP Green Schools Summit |
| ▪ Southern Nevada Department of Health |
| Local Examples of Food Diversion Best Management Practices Already Exist |
| ▪ Casinos: MGM, Sands, Caesars and others |
| ▪ RC Farms (pig farm) |
| ▪ Albertsons and Sprouts stores |
| ▪ UNLV Green Event Certification, Game Day Challenge |

¹ For additional information on SWOT analysis, see https://en.wikipedia.org/wiki/SWOT_analysis

| |
|---|
| Strengths: For Food Recovery in Southern Nevada |
| Education has Been Initiated in Local Schools to Change Food Culture |
| <ul style="list-style-type: none"> ▪ NDEP and City of Las Vegas student education ▪ Clark County School education for administrators |
| Policy Changes for School Meal Changes are in Progress |
| Weaknesses: For Food Recovery in Southern Nevada |
| Limited Food Collection and Distribution Infrastructure |
| <ul style="list-style-type: none"> ▪ Poor linkages between food donors and receivers ▪ Not enough places to easily donate food |
| Poor Marketing for Uses and Benefits of Compost |
| <ul style="list-style-type: none"> ▪ Few buy-local initiatives ▪ Business and health value are not well understood |
| Limited Education Resources for Larger Population Regarding Food |
| <ul style="list-style-type: none"> ▪ Expiration dates and safety are not understood ▪ There needs to be a culture change - It should not be ok to throw away food ▪ Businesses do not understand that they are not liable for good faith food donations under the Good Samaritan Act |
| Lack of Critical Mass Leading by Example |
| <ul style="list-style-type: none"> ▪ The City of Las Vegas does not have a food donation program ▪ There are limited businesses/corporations with food recovery programs ▪ Only a few schools are using food diversion services |
| Food that Can't be Donated to Humans is Often Being Thrown Away |
| <ul style="list-style-type: none"> ▪ Food donor perception that "it should be free to give" ▪ Reality of hunger in the area is not highly visible |

| |
|--|
| Opportunities: For Food Recovery and Composting in Southern Nevada |
| <ul style="list-style-type: none"> ▪ Monetary and social incentives exist to encourage large generators (supermarkets, casinos, etc.) to get involved ▪ Food insecurity is a local problem for children and the elderly ▪ Wasted hotel and casino food is prevalent in Las Vegas ▪ There is plenty of feedstock for all food recovery methods (excess food to people, animal feed, anaerobic digestion and composting) ▪ "Green facility" competition between casinos is growing ▪ Policy/regulation change for schools (served vs. offered) is in progress ▪ Efforts for schools to increase food redistribution can be expanded ▪ Compost helps crop growth and supports regional food security ▪ New business in the area could be producing green packaging etc. ▪ Producing renewable energy from food scraps via anaerobic digestion is viable for the region ▪ GHG reduction from compost/sequestration and landfill diversion are benefits ▪ Opportunity to improve the health of population |

| Threats: For Food Recovery and Composting in Southern Nevada |
|--|
| ▪ Existing culture and practices |
| ▪ Las Vegas maintains a stigma as a wasteful community |
| ▪ "Nice to do" mentality vs "need to do" about food waste |
| ▪ Public and corporate perception of expiration dates |
| ▪ Changes in materials for source reduction can be costly |
| ▪ Past poorly run composting facilities created some bad product/reputation) |
| ▪ Too much feedstock for RC Farms and A1 Compost |
| ▪ Lack of food waste laws and regulation |
| ▪ Lack of public awareness or concern about wasted food |
| ▪ High costs of composting and anaerobic digester technology |
| ▪ Food waste contamination drives up compost production costs |
| ▪ Inexpensive landfill disposal fees |
| ▪ Lack of food waste collection infrastructure |
| ▪ Federal regulations for schools are difficult to change |
| ▪ Americans want/expect larger portions of food |
| ▪ The Good Samaritan Law is not understood and/or known |
| ▪ Lack of adopted and/or regulated specs for compost production or use |

CONCLUSION

The Southern Nevada Food and Recovery Workshop served to bring together a diverse room of stakeholders who were engaged and cared deeply about reducing the waste of America's most valuable resource -- food.

There were lively presentations and videos that served to feed serious discussion and debate. In the end, a long list of opportunities was developed alongside numerous barriers to increasing food and organics recovery in Southern Nevada.

The input received at this Workshop can inform opportunities to ***Make a Difference in Southern Nevada*** by dramatically reducing food waste while simultaneously feeding vulnerable populations and animals, developing compost and/or anaerobic digestion capacity to recover inedible food scraps, and ultimately support small agriculture and local food systems.



APPENDIX A: WORKSHOP ATTENDEES

| Name | Organization | Website |
|-----------------------------|---|---|
| Government | | |
| Raymond Hess (Speaker) | Regional Transportation Commission of Southern Nevada | www.rtcnv.com |
| Dave Emme (Speaker) | Administrator, Nevada Division Environmental Protection | http://ndep.nv.gov/ |
| Rachel Lewison (Speaker) | Nevada Division of Environmental Protection | http://ndep.nv.gov/ |
| Allison Schnitzer | Southern Nevada Health District - Chronic Disease Prevention & Health Promotion | www.getthehealthyclarkcounty.org |
| Aminta Martinez-Hermosilla | Southern Nevada Health District | http://southernnevadahealthdistrict.org/ |
| Brian Northam | Southern Nevada Health District - SW & Compliance | http://southernnevadahealthdistrict.org/ |
| Deborah Clark | Southern Nevada Health District - EHSII | http://southernnevadahealthdistrict.org/ |
| Will Thompson | Southern Nevada Health District | http://southernnevadahealthdistrict.org/ |
| Alejandra Fazekas | City of Henderson | www.cityofhenderson.com/ |
| Laura Giuliano (Speaker) | City of Las Vegas Environmental Division - WWTP | www.cleanwaterteam.com/pretreatment.html |
| Nichole Malichky | City of Las Vegas - Sustainability Division | www.lasvegasnevada.gov |
| Nicole Eddowes | City of Las Vegas - Planning Department | www.lasvegasnevada.gov |
| Mark Silverstein | Clark County Department of Aviation | https://www.mccarran.com/ |
| Zoe Heller (Speaker) | US Environmental Protection Agency, Region 9 | http://www2.epa.gov/aboutepa/epa-region-9-pacific-southwest |
| Timonie Hood (Speaker) | US Environmental Protection Agency, Region 9 | http://www2.epa.gov/aboutepa/epa-region-9-pacific-southwest |
| Amanda Hong (Speaker) | US Environmental Protection Agency, Region 9 | http://www2.epa.gov/aboutepa/epa-region-9-pacific-southwest |
| Education | | |
| Anna Brandenberger | University of Nevada Las Vegas - Aramark Marketing Manager | https://www.unlvdining.com |
| Tara Pike (Speaker) | University of Nevada Las Vegas | http://facilities.unlv.edu/recycling/ |
| Christopher Lynch | University of Nevada Reno - Nevada Business Environmental Program | www.unr.edu |

| Name | Organization | Website |
|-----------------------------|---|---|
| Roland Fornoff | Western Sustainability and Pollution Prevention Network - UNR | http://wsppn.org/ |
| Mark Jones | Clark County School District | http://ccsd.net/ |
| Sarah Diefendorf | Environmental Finance Center West, Dominican University | www.efcwest.org |
| Lauralee Barbaria | Environmental Finance Center West, Dominican University | www.efcwest.org |
| Nonprofit | | |
| Bernard Schwab | Springs Preserve | www.itllgro.com |
| Pete Duncombe | Springs Preserve | www.springspreserve.org/ |
| Cary Oshins (Speaker) | U.S. Composting Council | http://compostingcouncil.org/ |
| Darwin Bosen (Speaker) | Three Square Food Bank | www.threesquare.org/ |
| Jane Feldman | Sierra Club - Southern NV | www.sierraclub.org/toiyabe/southern-nevada |
| Lauren Boitel | Green Chips, Ex. Director | http://greenchips.org |
| Randy Williams | Teton Conservation District | www.tetonconservation.org/ |
| Rhonda Kilough | Angel Faces; earth arts unlimited | http://projectangelfaces.org/ |
| Rick Van Diepen | U.S. Green Building Council | http://usgbcnv.org/ |
| Private Sector | | |
| Dane Buk (Speaker) | Terra Firma Organics | terrafirmaorganics.com |
| Gilbert Gutierrez | Terra Firma Organics | www.terrafirmaorganics.com/nevada-location/ |
| Krista Koch | First Choice Tree Service | https://www.firstchoicetree.com/ |
| Pranav Jampani | Sands | www.sands.com |
| Bob Combs (Speaker) | RC Organics | |
| Janet Combs | RC Organics | |
| Clinton Combs | Combs Brothers | www.combsbrothersllc.com/ |
| Darcie Renn | Vons, Safeway & Albertsons Grocery Stores | www.safeway.com |
| Dirk Ravenholt (Speaker) | RC Farms | |
| James Combs | Combs Brothers | www.combsbrothersllc.com/ |
| Jamie Bohan | Republic Services | http://site.republicservices.com/site/las-vegas |
| Lisa Buck | Ocean Spray | http://oceanspray.com |
| Jeff Ruskowitz | Caesar's Corp. | www.caesars.com |

APPENDIX B: PRESENTATION AND VIDEO LINKS

Workshop presentation slides are available online at:

<https://drive.google.com/folderview?id=0Bx3w4Uk67-4nWDRjdzdodm0zLWM&usp=sharing>

The following video clips were shown at the Workshop:

1. Opening Remarks from EPA

- a. U.S. EPA: Making a Visible Difference in Communities
<https://www.youtube.com/watch?v=JSkl-n-hddw&feature=youtu.be>
- b. The Food Waste Problem: Just Eat It: A Food Waste Movie (clips shown, with approval from filmmakers)
www.foodwastemovie.com/

2. Source Reduction

- a. LeanPath Video
<https://www.youtube.com/watch?v=orHIJKDY5p8>

3. Excess Food to People

- a. The Signature Room (Chicago) & Food Rescue Group Zero Percent
<https://www.youtube.com/watch?v=U2ij5kiWqWo>
- b. Just Eat It clips

4. Feed Animals

- a. Just Eat It clip

5. Industrial Uses & Anaerobic Digestion

- a. U.S. EPA Region 9: East Bay MUD turns food scraps to energy
www.epa.gov/region9/waste/features/foodtoenergy/index.html
- b. L.A. Co-Digestion
<https://www.youtube.com/watch?v=t37NujesDrM>

6. Composting

- a. Cedar Grove Composting
https://www.youtube.com/watch?v=OaiRKS6n3sQ&list=PLjnCMsopGTbdkRc9XN--u3RUul2_dnTBN&index=40

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EPA's Making a Visible Difference in Communities Website

www.epa.gov/smartgrowth/making-visible-difference-communities