

Green Casinos

What does it take to achieve deep sustainability in a tribal casino? If the Forest County Potawatomi and Santa Ynez Band of Chumash Indians are the examples, then it really comes down to two factors: the tribal government's initiative to be good stewards of the earth, and hiring and retaining a sustainability champion as the Director of Facilities.

The two tribes are tackling climate change mitigation from two different angles, and each are achieving remarkable accomplishments. Both tribes have strong commitments from tribal leadership that enable smart investments in sustainability actions, and each have facilities' directors who are not only relentless in driving forward those smart investments but have proven to be creative problem solvers.



Mark Funkhouser

Santa Ynez Band of Chumash Indians

Located about 125 miles up the coast from Los Angeles, the Santa Ynez Band of Chumash Indians' commitment is stated front and center [on their website](#): *"Fostering the well-being of future generations while honoring the traditions of our past."* There are multitudes of interconnected ways to walk towards this commitment, and waste minimization is one important strategy. Under the leadership of Mark Funkhouser, Director of Sustainability and Custodial Services, the [Chumash Casino Resort](#) has taken waste diversion and minimization to a whole new level. What began in 2004 as an effort to reduce the amount of cardboard in the waste stream going to the landfill (along with 8 million other pounds of waste - literally) has turned into a full scale assault on diverting waste away from the landfill. In 2004 they had a recycling rate of about 3%; they are currently achieving a 92% waste diversion rate, with most of that diversion going to direct recycling. This is as opposed to sending mixed recyclables to a recycling center where materials are often contaminated, rendering them unrecyclable, and otherwise often sit in the Materials Recovery Facility waiting for a buyer. Instead of that (mostly ineffective) model, food waste and other wet-source contaminants are separated by the back-of-house staff to ensure there is no contamination, then Funkhouser's team sorts through all the rest of the Casino's waste streams to get each and every piece to the right place for dedicated recycling.



Victor Barajas - Recycling Technician Supervisor - in front of bundled cardboard for recycling.

Funkhouser truly is a recycling champion. He started this program by color-coding trash bags throughout the Casino in order to gain an understanding of what exactly comprised the waste streams in each of the different areas of the Casino. He and his team still conduct two trash audits every year, and reevaluate their goals and strategies every January.

The first year of the program was focused on separating and recycling cardboard. Cardboard is highly susceptible to soiling, and unless it is in pristine condition it cannot be sold as a commodity, so it is particularly important to separate it at the loading dock before it can become contaminated.

Importantly, Funkhouser makes deliberate efforts to identify markets for everything in the Casino's waste streams. Because of the [California Refund Value \(CRV\)](#), which is the 5 to 10 cents paid to consumers by recycling centers for returning specific containers, the Chumash Casino was able to raise enough money in their second year of waste reduction to fund an additional team member, and they accomplished this by the sole act of separating and recycling aluminum cans. With every team member hired, they are able to accomplish that much more in waste sorting and diversion.



Sustainability/Custodial Services: Recycling Technician team separating drinking bottles from waste stream

Another market that Funkhouser was able to identify to improve the Chumash Casino's diversion rate was for the massive amount of carpet that casinos go through. Not only did he find a local business ([LA Fiber](#)) that shreds up and makes carpet pads out of old wool blend carpets, the Casino also closes the loop by buying back those recycled carpet pads when laying new carpet.

Funkhouser works with many unique and often niche companies to find markets for their various waste streams (such as [Dart Container Corp](#), who recycles polystyrene cups into picture frames, crown molding, and other products; [Engel & Gray](#), who handles all of their food scraps and biosolid waste; [Clean the World](#), who breathes a second life into discarded hotel soap and shampoo products; [Veggie Rescue](#), who feeds high quality meals to food insecure populations; and [Frontline International](#), who transforms the Casino's used cooking oil into biodiesel), but one of the most unexpected solutions that Funkhouser found is in partnership with [TerraCycle](#). TerraCycle is known for recycling hard-to-recycle waste, and it turns out that cigarette butts - not only one of the most abundant sources of litter, but also one of the most toxic - can be recycled into products such as plastic shipping pallets, park benches, and picnic tables. Since 2013, Chumash has sent over 18.4 million cigarette butts to TerraCycle for recycling. The Chumash Casino Resort has a dedicated non-smoking section, but smoking is currently allowed while seated at a slot machine or table game where a plexiglass shield is present.



Clean the World - Used amenities collection area

Of course, one individual would not be able to accomplish all this without a clear directive and consistent support from the tribe. Funkhouser grew up near the Chumash Casino. He remembers it as being the place where everybody in the community wanted work, but more importantly he recalls how much support the Chumash provided for the community. Whether it was through providing the local 4H club with supplies, donating money to local organizations, or

supporting the area high schools, the philanthropic [Chumash Foundation](#) took good care of the community. Stemming from the actions of supporting the community, the next logical step was for the Santa Ynez Band to improve the sustainability of the Casino.

Additionally, Chumash would not be embarking on these waste diversion efforts unless there was a clear financial case to be made. If the ROI (return on investment) is projected to be over five years, Funkhouser will spend some time tweaking the project to see if he can bring it under five years. If it cannot be done, the project does not go forward.

Forest County Potawatomi Community

Across the country, the Forest County Potawatomi Community (FCPC) holds true to their [environmental mission statement](#) in their sustainability efforts at their two casinos: the [Potawatomi Hotel and Casino](#) in Milwaukee, Wisconsin, and the [Potawatomi Carter Casino Hotel](#) located on the Tribe's reservation in Crandon, Wisconsin.

FCPC Environmental Mission Statement

“The traditional values of the Forest County Potawatomi Community teach us to respect all living things, to take only what we need from Mother Earth, and to preserve the air, water, and soil for our children. Reflecting these values, we take leadership in creating a sustainable and healthy world. We resolve to reduce our own environmental impacts and to take steps to remedy the impacts of others. We encourage others to do the same. We also seek legislative and policy changes that protect the environment for all people, including generations to come.” – Adopted November 20, 2008

The Tribe feels a strong connection to the earth and the environment, and that it is their duty to preserve a healthy environment for future generations. Both the current and the former governors of the FCPC formed climate change committees to help advise the Tribe on what programs would make the most sense and have the greatest positive returns for the environment. The tribal attorney general is one of the members of the climate change committee, which opens doors for the Tribe to also influence policy beyond their own tribal governance. Because the FCPC has a goal of achieving carbon neutrality, and recognizes that using fossil fuels to produce energy pollutes the natural world (particularly through mercury deposition and air pollution), the Tribe has put most of its environmental sustainability focus on energy.

You just might go your whole life and not meet a more knowledgeable, passionate, and enthusiastic energy hero than David Brien. Much like Funkhouser, Brien is the Facilities' Director for the Tribe's casinos and therefore is responsible for ensuring that any actions he

takes make financial sense. But rather than focusing on waste diversion, Brien has dedicated his career to reducing both energy consumption and emissions.

To help the Tribe meet their goal to become carbon neutral, each of the casinos has large solar energy installations. But like any fiscally responsible facilities director, investment in renewable energy was not the starting point. Energy efficiency is the clear winner when it comes to reducing both costs and emissions simultaneously.

Thirty years ago the Tribe established *Project Greenfire* to establish a baseline energy use audit. From there they created quarterly climate reports that outlined the use of energy - and any changes - in individual buildings. Next they came up with a list of the top 100 energy efficiency projects that would help reduce the Tribe's energy use and environmental impact. At the tail end of that process came the decision to invest in green energy production.

The FCPC has solar arrays on the parking structures at their Casino, generating approximately 450KW, with plans to expand to approximately 800KW.

For Brien, energy efficiency still remains the top tier of opportunity. In their 500 room hotel (which was the first LEED gold certified hotel in the state of Wisconsin) the doorknobs send a signal to the thermostat occupancy sensor, which scans the room every time someone exits or enters. If the room is unoccupied, the thermostat automatically adjusts the air conditioning or heating to use less energy. When a guest checks in, the computer system brings the room to a comfortable temperature. Each room also has low flow water fixtures to reduce water consumption and the amount of heating needed for hot water.

Brien hired an engineering firm to do an optimization of all the chillers and boilers that serve the casino, providing them with direct digital control of all their air handling equipment. With one of the largest chilled water plants in the state of Wisconsin, this represented a major opportunity for improving efficiency and reducing emissions. Ultimately, they were able to reduce their boiler plant by four boilers because of the increased efficiency of the system. Then they recommissioned the pumping systems which bought them even more efficiency from the remaining systems. Between the variable frequency drives they installed on their 1000 air handler motors, and the electronically commutated motors on their refrigeration units, they reduced energy consumption of these systems by 60%.



On the Casino floor, they changed the way warm and cold air are exchanged by installing what is known as displacement ventilation. Displacement ventilation works with the natural properties of warm air rising and cold air sinking. This strategy allows the HVAC system to run many drives at a slower speed, reducing energy consumption and saving \$500,000 per year. This method not only saves energy and money, but it also improves the indoor air quality: the warm air that rises up also pulls cigarette smoke with it, which effectively takes smoke out of the breathing spaces and captures it in the return air filter system. They then take the indoor air quality improvements two steps further by first using UV light to clean the air handlers and kill viruses, and then using a photocatalytic oxidation process to kill odors and bacteria.

The low hanging fruit for any energy efficiency program is, of course, in the lighting. Brien has spearheaded numerous lighting projects, beginning with converting all the lighting in their 5000 car parking structure to LEDs, and subsequently reducing the associated energy by 70%. All lighting in the hotel and casino were then swapped out for LEDs and they installed lighting sensors and reduced lighting in their back of house hallways.

Since the net metering structure in Wisconsin is not favorable for distributed energy generation, the solar energy generation installed at the Casinos is sized to produce only the amount of energy they can use. However, they are currently selling electricity into the grid by way of the biogas digester that is on their property and is both tribally owned and operated. The biogas digester takes liquid waste and some solid waste and converts it into methane. The methane is captured and used as natural gas to drive electric generators. That electricity is then sold to Wisconsin Energy to be used on the grid. Then, the excess heat produced by the generators is piped over to the casino, where it is used to preheat incoming domestic water (such as in the kitchens, hotel showers, and hotel rooms). So what was once liquid waste is turned into both profitable, clean electricity for others to use, and free energy to preheat water in the Casino. Win. Win. Win.



FCPC's biogas digester.

Endless Possibilities

It is hard to imagine the Casino of the Santa Ynez Band of Chumash Indians finding even more ways to divert waste from the landfill, or the Casinos of the Forest County Potawatomi Community finding more ways to reduce energy related emissions. But knowing how passionate and creative the facilities' directors are, and how supportive and committed to caring for the earth the tribes are, the horizon seems endless.