City of Branson Sustainability:

2014 Summary

SIX YEARS:

"Seeing Through a Lens of Sustainability"

On Behalf of Branson Sustainability Council

Mona Menezes
Environmental Specialist
March 2015

2014

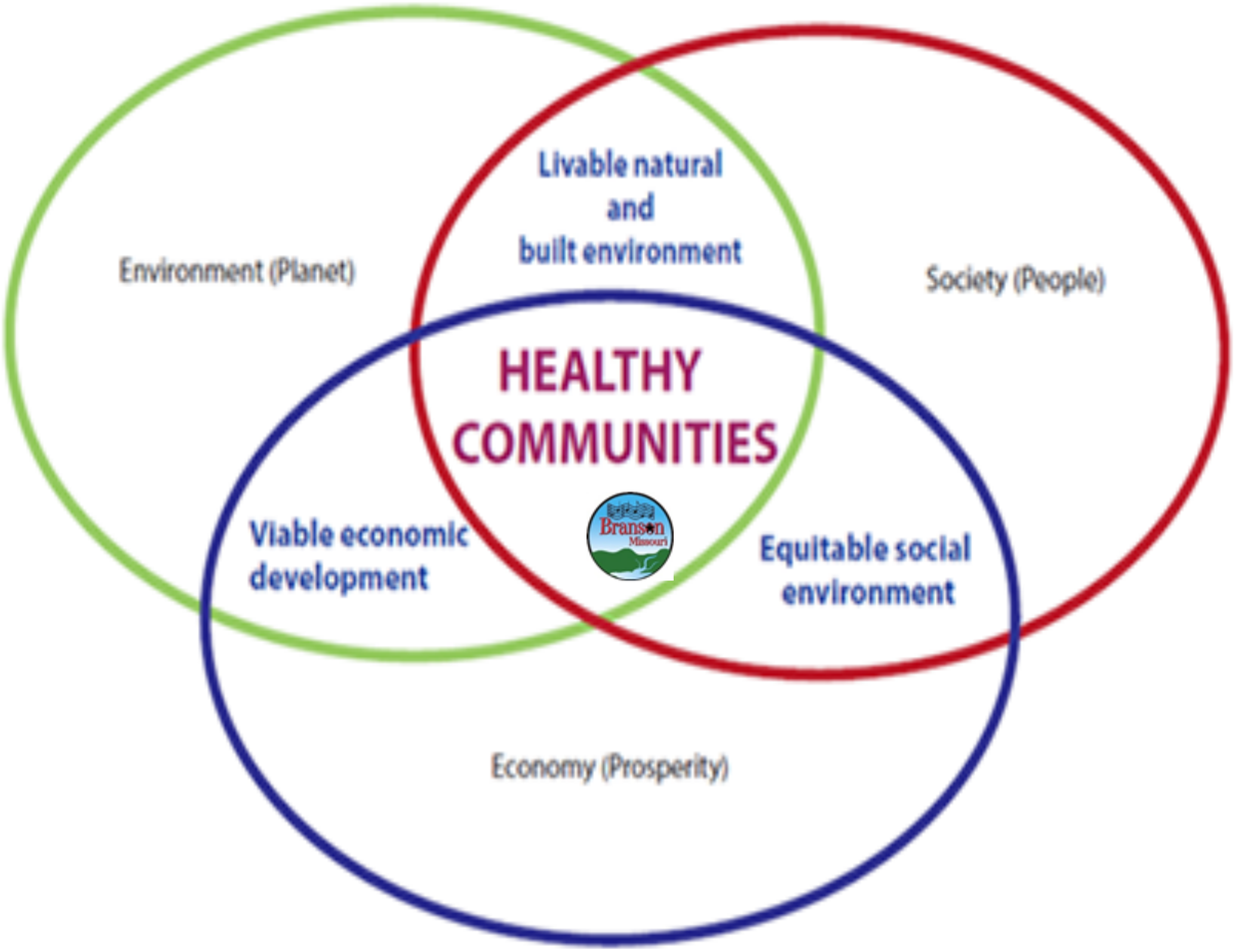
Sustainability **$$avings** Make Sense:

Energy Service Contract	$	116.086.00
Convention Center Energy Savings	$	113,049.00
Paperless Board Meetings/Clerks Office	$	10,556.00
Recycle Center Oil Recycling	$	1,034.00
Police Eco-Boost/Fuel Savings	$	5,477.00
Fire Recycle River Rock from WTP Intake	$	200.00
Organic produce grown at Fire Dept	$	600.00
Change out downtown street lights	$	3,443.00
Battery Recycling	$	920.00
Computer Servers	$	400.00
Computer HVAC	$	19,800.00
Utilities/WTP Lights & Heat Pump	$	9,000.00

Total 2014 Savings **$ 280,565.00**

PROTECTION, PRESERVATION, & RESTORATION

OF THE NATURAL ENVIRONMENT IS A HIGH PRIORITY OF THE CITY



Funding Restored to 2012 Levels

- ❑ $10,000.00 for incentives and grants

Environment & Quality of Life

- ❑ Trails Committee
  - ❑ Administration
  - ❑ Engineering
  - ❑ Planning
  - ❑ Fire
  - ❑ Parks
- ❑ Mile Markers Improve Public Safety
- ❑ More connectors & Links
- ❑ Create Master Plan/ Priorities

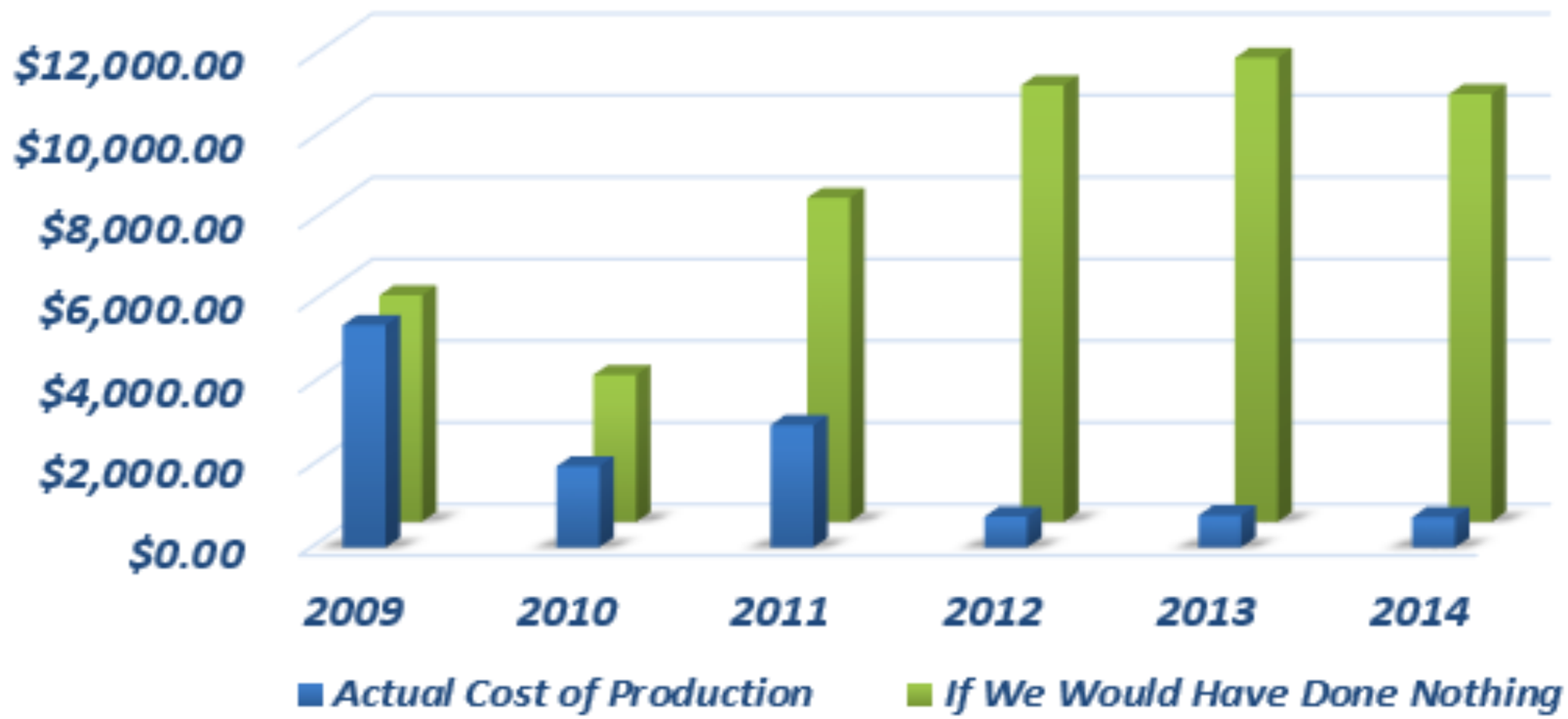
Community Involvement & Partnerships

- ❑ Boy Scouts – Sidewalks & Decals
- ❑ Ozarks Water Watch Conference Sponsor
- ❑ Taneycomo Cleanup Sponsor
- ❑ Lodging Assoc. & Chamber(s) Recycling

Continuing our commitment to sustainability

The Paperless Agenda Project

Illustrating the long term results of implementing cost saving programs.



$36,858 in savings!

Today, it costs less than $800 a year to produce the Agendas.

If we had not implemented the Paperless Agenda Project, it would cost the City *over $10,000 a year*.

Continuing our commitment to sustainability

Simple changes…

…can make a big difference over time.

- Mailings aren't resent out to individuals whose mail has been returned.
  - Saves approximately 100 copies, 60 envelopes, postage and time
  - $2080.00 annual savings
- Court has reduced paper and printing for certain required court waivers by 50%.

FINANCE OFFERING PAPERLESS BILLING

<u>If 10% participation</u>:

Eliminate 28,800 sheets of paper & ink cartridges
Projected Savings: $4,728.00 annually

OR

Paperless Billing Analysis				
3/11/2015				
	*Paperless Customers	Cost/Ea	Total/ Month	Total/ 2015
#10 Envelope	760	0.0372	28.27	282.72
#9 Envelope	760	0.0335	25.46	254.60
Bill Paper	760	0.0274	20.82	208.24
Labor	760	0.025248	19.19	191.88
CBS Print	760	0.0080	6.08	60.80
Postage	760	0.4800	364.80	3648.00
Postage Print	760	0.0109	8.25	82.51
Total**			$ 472.88	$ 4,728.76

HR Accomplishments in 2014

- New Employee Orientation Sustainability Video
- Health and Wellness:
  - The "People" part of the Triple Bottom Line
  - Designated "Fit-Friendly" Organization for the second year in a row.
    - Meets American Heart Association Standards

- Virtual documents wherever possible.
  - In 2014, scanning and emailing applications & HR Manual Online
    - 10,500+ copies eliminated annually

- Virtual Supply Cabinet
  - Departments list items they don't need but other departments might
    - eliminates unnecessary ordering of office supplies or equipment.

- HR on Sustainability Committee
  - Sponsor monthly sustainability question in newsletter
    - Winner awarded at the Manager Meetings
    - Increases employee awareness of sustainability success

We work smarter: Copy and Print Less; Store and Send Electronically More.
We Reduce, Reuse, and Recycle whatever we can.

All New Employees: Sustainability Orientation

https://www.youtube.com/watch?v=uZLf6O6DtxQ

Electric Car Charging Stations

- Phase II of Hwy 76 project (2016)

Household Chemical Collections:
The Water Connection

- 4.7 tons in 2014
- 38.9 tons in 7 years

It's about the water

- Not in sewer system
- Not in stormwater
- Not in soil
- Cost: $1200/ton/avg

How's the Glass Recycling?

- 350 Tons since 2012
- 175 tons in 2014
  - 29% increase
- Branson Convention Center & Hilton
- Stonehill Winery
- Big Cedar

350 Tons since 2012

=

2,240 Attics

Half & Half

49% going directly to County Transfer Station from consumer or businesses.

- 51% coming in through bins.

Stormwater: Bioswales & Permeable Parking

Chamber of Commerce
Rain Gardens

- Stormwater
  - Slow down
  - Filter through soil and plants
- Reduce both volume and pollution

Chamber of Commerce Rain Gardens/Bio-swales

Old Parking Lots

- Stormwater: peak flow runoff
- Pollutants
  - Oils
  - Fluids
  - Heavy metals
  - Washed into nearest stream

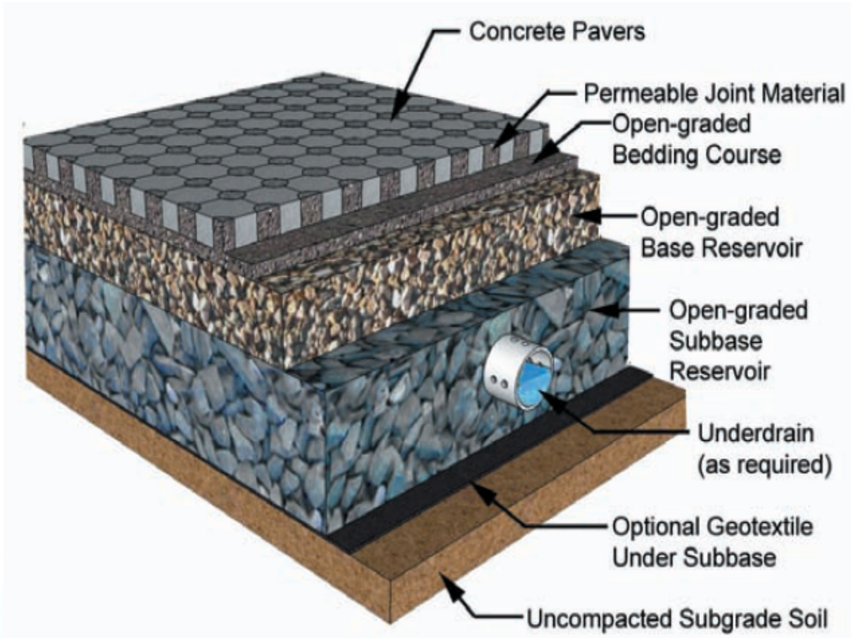
Lakeside Forest : "Watershed Friendly" Parking Lot

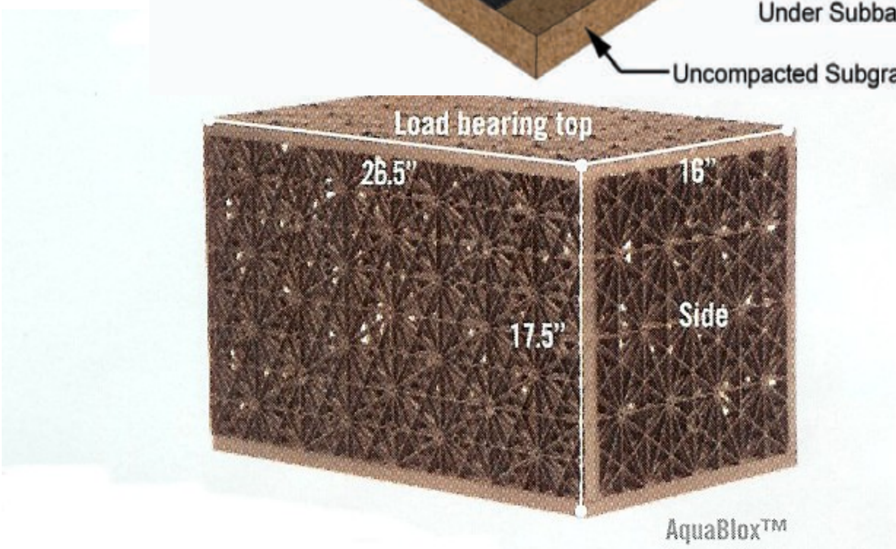
- Little or no runoff
- Water stored, recirculated for fountain
- May be used for irrigation in future

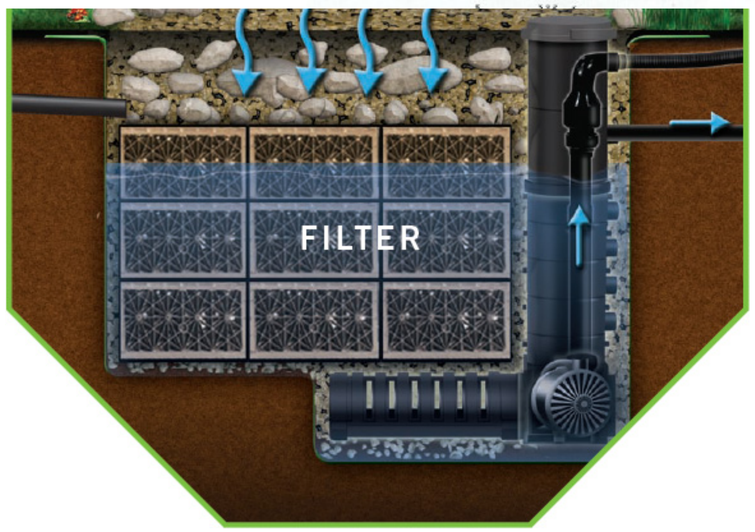
- **Stormwater infiltrates instead of creating peak flow runoff**
- **Pollutants (oils, fluids, heavy metals)removed by natural bacteria in substrate**

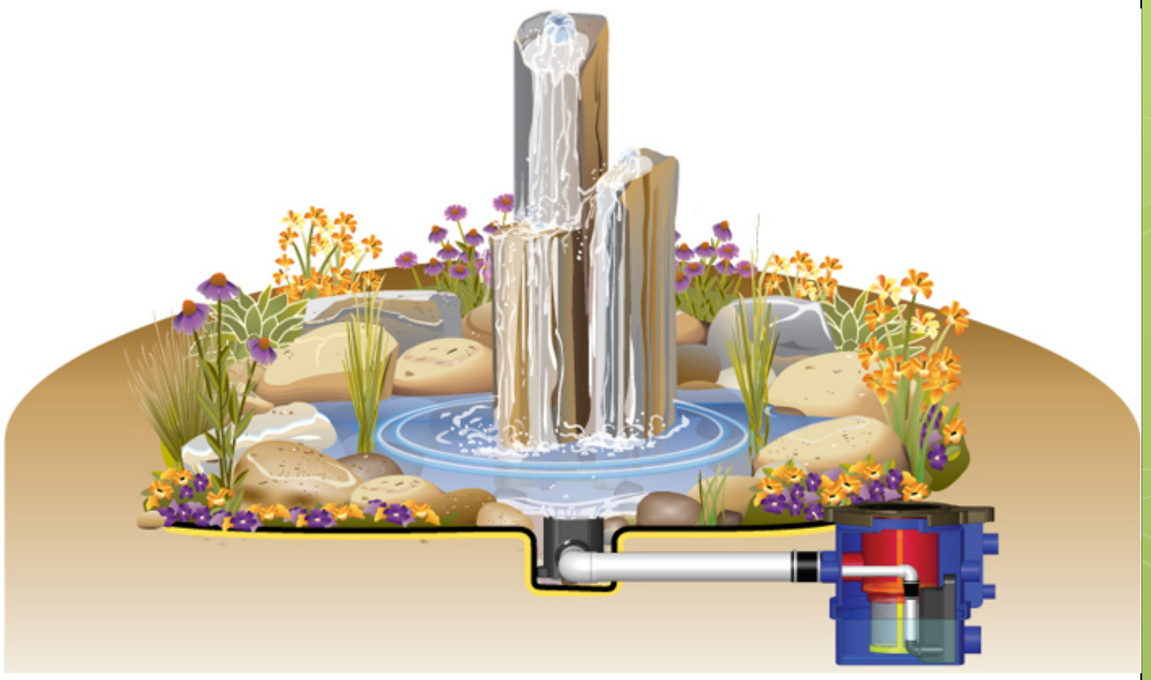
Engineering/Public Works

David Miller / Roger Clark





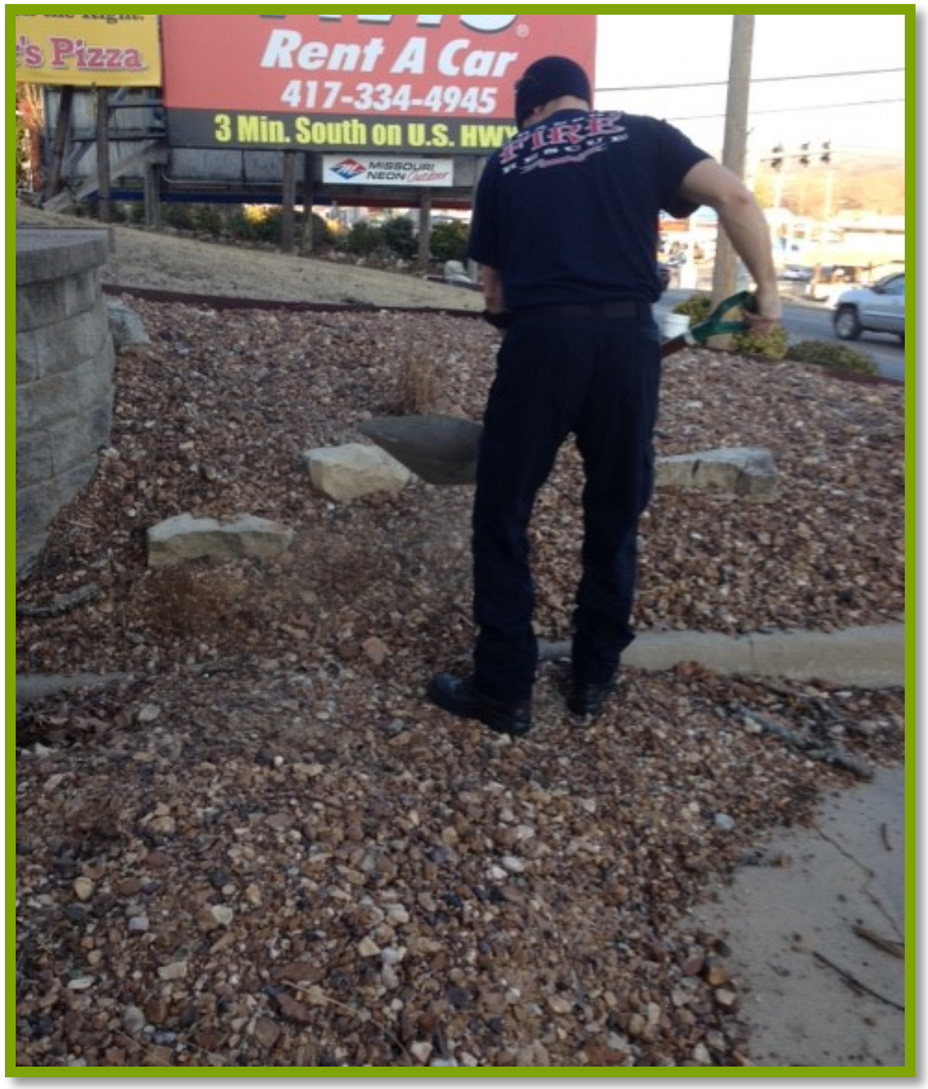




Convention Center

- *Applying for LEED Certification in 2015*
- *SMG reduced energy use by 25%*
  - *$113,049 in savings in 2014*
  - *Escalators run only during events*
- *Occupancy sensors in public areas*
- *Cut solid waste by 66%*
- *Recycling Glass (Hilton, Too) 5500 lbs/yr*
- *Compostable flatware and plates*
- *Composting organic waste (Hilton, Too)*
  - *1600 lbs/month*
    - *9.6 tons/yr*

Sustainable Use of Creek Rock



Fire Fighter Chris Ely uses creek rock to landscape Fire Station 1. The creek rock was scooped out of Lake Taneycomo during the flood to clear a water treatment intake. It saved the Department approximately $250.

Waste
Or
Resource?

Conserving Utilities

- **Electric and water use are charted on a monthly basis. Employees are made aware of results, reminding them to be "energy smart".**

Fire Fighter Rick Ivey installs hot water heater re-circulation pumps at Stations 2 and 3. His idea could reduce water consumption up to 40% at each station. He was awarded a "Green Ideas Award" for implementing his idea.

Urban Garden 2014 – Bigger and Better

Fire Station 2:

- Expanded Garden
- Healthier employees!
- Captain McCarty and Engineer Reinke at presentation at City Hall for all employees.

Engineer Reinke and Captain McCarty display a harvest.

2014 Efforts…

TOTAL: 262 TREES!

Arbor Day

- Tree City (19th) & Growth Award (14th)
- Planted 250 short-leaf pine seedlings
  Lakeside Forest Wilderness Area

Arbor Fest

- Planted 1 sycamore and 3 crape myrtles
  Forsythe Street roundabout

Roark Valley Trail

- Planted 7 trees

Memorial Tree Program

- Planted 1 redbud

Green Initiative Awards

Beautification Awards…

April: The Grand Village Shoppes

2800 W. State Highway 76

May: Branson Auto Museum

1335 W. State Highway 76

June: Presley's Theater

2920 W. State Highway 76

July: Whispering Hills Hotel

2346 Shepherd of the Hills Expy

August: Dinosaur Canyon Golf

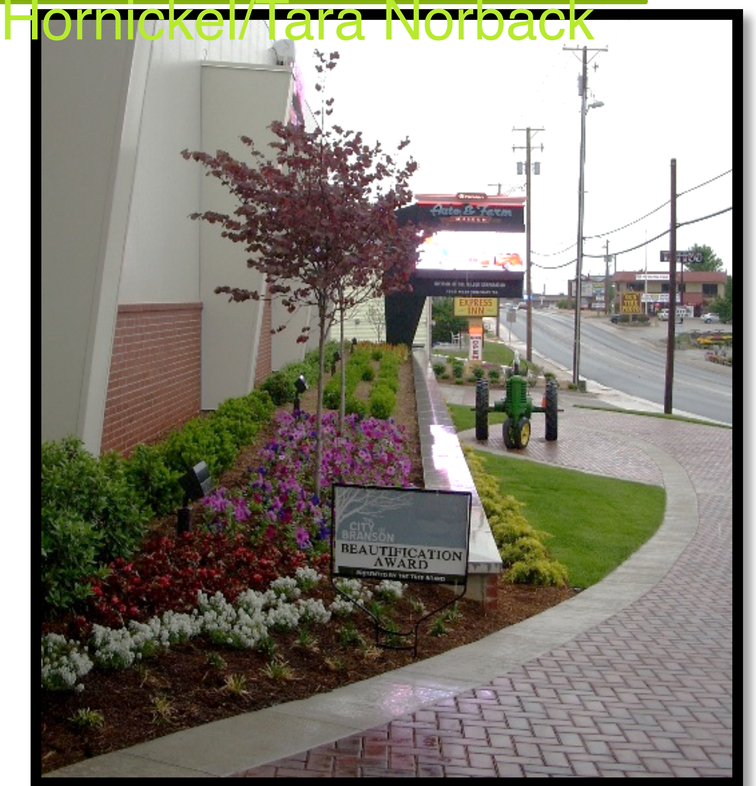
2501 Green Mountain Drive

September: White Oak Station

4017 W. State Highway 76

October: Comfort Inn and Suites

5150 Gretna Road



PARKS AND RECREATION

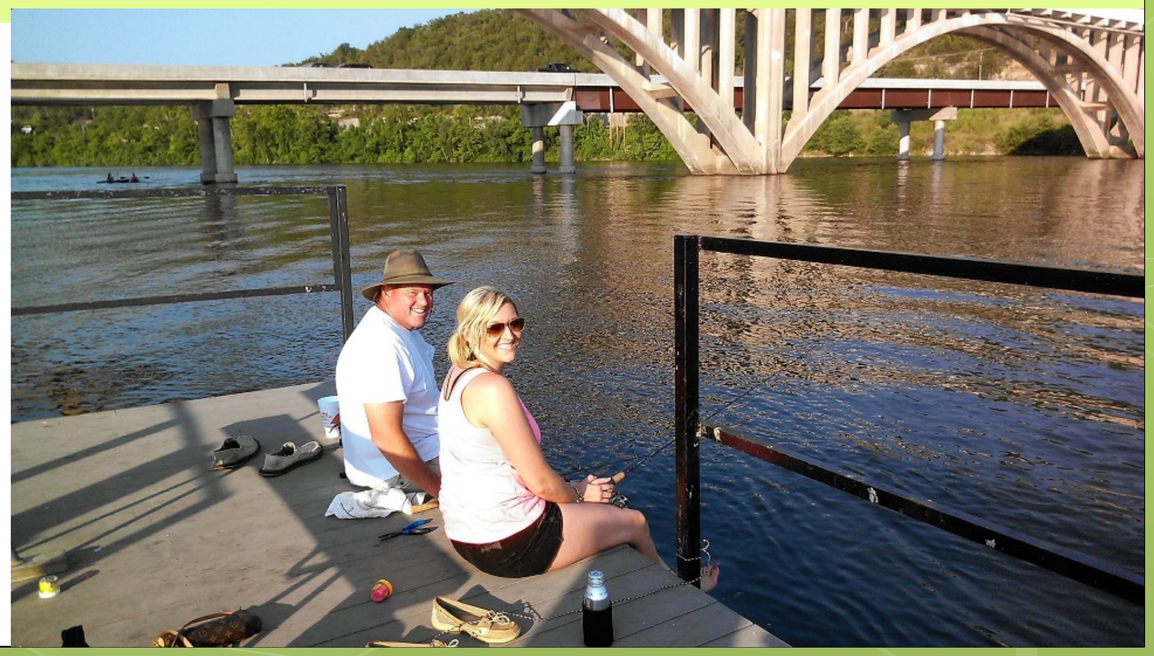
Cindy Shook / Brandon Stortz

BEFORE

AFTER

Using Sustainable/Recycled Materials: Recycled Plastic + Sawdust

- Longer lifespan
- No splinters
- Eliminates annual maintenance/repairs

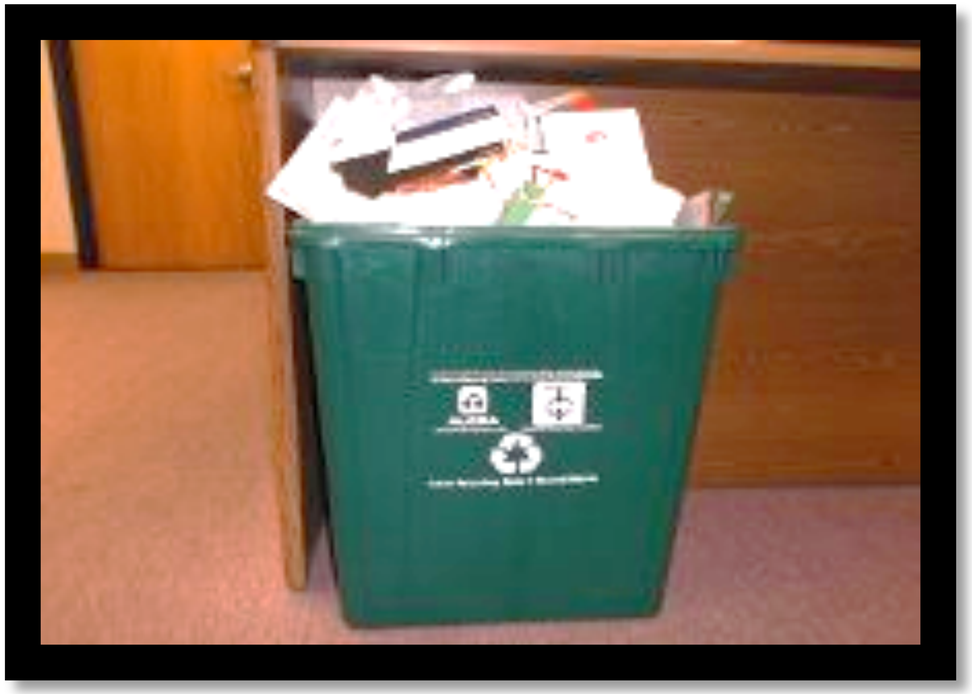


Going Paperless

- Park Board -3,000 copies
- School Flyers -11,290 copies
- Game Schedules -1,500 copies
- Surveys -2,000 copies

Total -17,790 copies

Plus:
84,000 water bottles refilled at RecPlex!



- Increased recycle bins 3X
  - 2012=4 2014=14
- Ordered 20 less cases of copier paper
  - Electronic copies of reports to outside agencies when permitted
  - Continue making reports and forms digital

Kent Crutcher / Lee Deeds

- **Drug Drop Box**
  - 514 pounds of unwanted medication
  - Keeps drugs out of hands of children, landfills, water supply.

- **Bike patrol**
  - Saves fuel & vehicle maintenance cost
  - Healthier for officers – Employee Wellness Program
  - Makes officer more approachable to the community

- **Jail Laundry**
  - Tantone Industries, Inc., a Green Score Gold Member

UTILITIES/WTP
Mike Ray/Errol Cordell

SUSTAINABILITY@ WATER TREATMENT PLANT

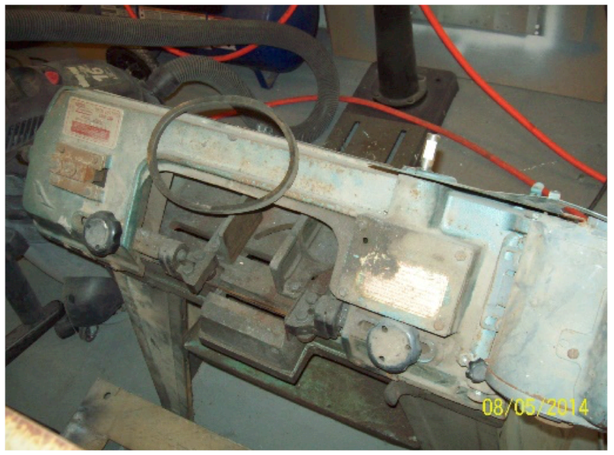
Replace lights with LED's

Replace electric heat/
2 stage heat pumps

Sustainability = $9,000.00 Savings in 2014

More light than before

Refurbish Band Saw = Like new tool



Water Loss Improvements

PHASE ONE

Capital Costs: $295,591.20
303 Commercial Meters Changed

Meter Change-out Program

2010-2011 Payback Summary

Additional Revenue

Water **$158,180.52**

Sewer **$171,690.60**

Total **$329,871.12**

Capital investment paid back:
11 months

With water conservation considered:

- Estimate $300,000 in additional revenue being captured annually

PHASE TWO

Meter Change-out Program

2011-2012 Payback Summary

Capital Costs: $383,511.99
156 Meters Changed
(152 Commercial)
(4 Residential)

Payback Period – 2.77 years
Life expectancy of new meters: 10 years

Additional Revenue

Water	$9,854	Res.
	$54,006	Com.
Sewer	$9,201	Res.
	$65,142	Com.
Total	$138,203	

CAPITAL INVESTMENT PAY BACK:

October 2015

AFTER PAYBACK:

Additional $125,000 (est.)/year revenue captured annually

PHASE THREE

Meter Change-out Program

2012-2013 ***Phase 3*** Payback Summary

Capital Costs: $189,250.00

1000 Meters Changed
(975 Residential)
(25 Commercial)

RESULTS COMING SOON!

Recovered Costs = Avoid Higher Rate Increases

Bio-Solids Dryer

Bio-Solids Centrifuge

Tri-Lakes Regional Bio-Solids Drying Facility – Cooper Creek

SEWAGE SLUDGE:

Waste? OR **Resource?**

Partnership

Branson• Hollister • Forsyth • Taney County • Kimberling City • Reeds Spring

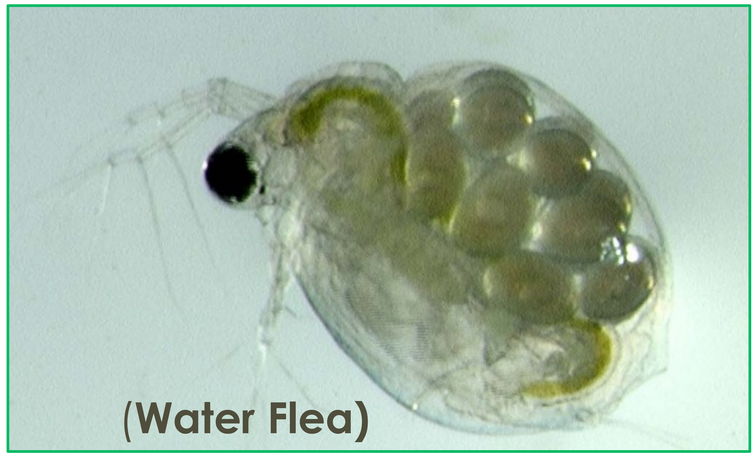
- **8,800,000 gallons of Class B Liquid Sludge annually land applied**
  - **(35,200 Tons)**
  - **CONVERTED TO:**
  - **1100 dry tons of Class A Biosolids**

Eliminates 90% of volume to transport

- **Nutrient Rich**
- **Pathogen Free**
- **Valuable Soil Supplement**

Biosolids End Product

Acute Toxicity Testing
Branson, Cooper Creek Waste Water Treatment Facility



Pimephales promelas

January 2015

Ceriodaphnia dubia

Test duration is 48 hours
Temperature is 24-26 degree Celsius
Light quality is Ambient laboratory illumination
Photoperiod is 16 hour light, 8 hour dark
Size of test vessel is 30 milliliters and 250 milliliters
Volume of test solution is 15 milliliters and 200 milliliters
Age of test organisms <24hrs. and 1-14 days (all same age)
Number of organisms/test vessel is 5 and 10
Number of organisms/concentration is 20 and 40
Feeding regime: none
Aeration: none
Test acceptability criterion: 90% or greater survival

Reconstituted Control	100%	100%
Upstream Control	100%	100%
6.25% Effluent	100%	100%
12.5% Effluent	100%	100%
25% Effluent	100%	100%
50% Effluent	100%	100%
100% Effluent	100%	100%
Result	PASS	PASS

Coming in 2015:

- Doubled Employee Incentives
  - $200.00
- $100.00 additional if improves Ozarks Green Score
  - Up to $300/person for Team

Richard Branson on the Business of Sustainability

Author and Founder of Virgin Group

"At Virgin, all of our businesses are continually looking at how they can minimize the impact they have on the environment." Richard Branson

Comments & Questions?

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