



Informed Decisions ~ Enhanced Development

Taylor Energy Center HIA

Melanie Simmons PhD Healthy Development Inc.

Steps of an HIA

- **Screening**
 - Identify projects or policies for which an HIA would be useful
- **Scoping**
 - Identify which health impacts should be included
- **Risk assessment**
 - Identify how many and which people may be affected
 - Assess how they may be affected
- **Recommendations to decision-makers**
 - Create report suitable in length and depth for audience
- **Evaluation** of impact of HIA on actual decision process



Collaborating on HIA:



Taylor County, Florida

- Population
- “Forest Capital”
- Paper mill
- Vocal opposition
- Development Authority



Tarry, I didn't get this to you sooner,
my doctor put me in the hospital last
Thursday. This is the article you
asked about. Hope it helps in your
study. It is probably hard to read as
I had to piece it together. You
asked where I thought contribution funds
should go, I told you Education & Sports
Complex. Other things that come to my
mind are Fire Dept, Law Enforcement & very
important, environmental safeguards, protecting
our water (aquifer) & air quality. And why
did they choose Taylor County, because I
don't think anyone else wanted it.

Thanks again for asking my opinion &
comments I've heard of others concerns. My
only regret is that the 20,000+ people
in this county have no say in what
they have to live in & breath.

Good Luck!

Scoping

Community input

Scope

- Emissions Impacts
- Jobs and Income





Emissions Impacts

Emissions

- Particulate Matter
- Ground Level Ozone
- Mercury in fish



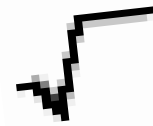
PM Impact on Mortality

- Long-term mortality increases—
 - per each 10 ug/m^3 in $\text{PM}^{2.5}$
 - 4% All Cause
 - 6% Chronic Lower Respiratory Disease
 - 6% Heart Disease
- TEC increase in PM^{10}
 - 0.133 ug/m^3 in PM^{10}



Methods

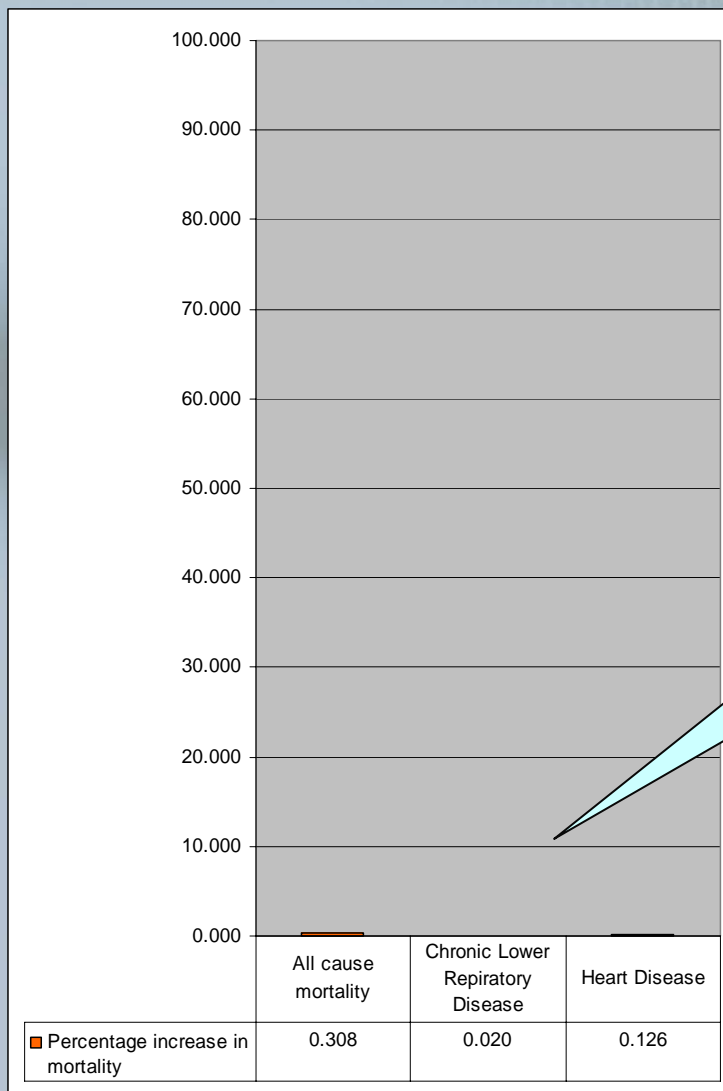
PM^{2.5} risk=RR



$$(X*0.06)/10$$

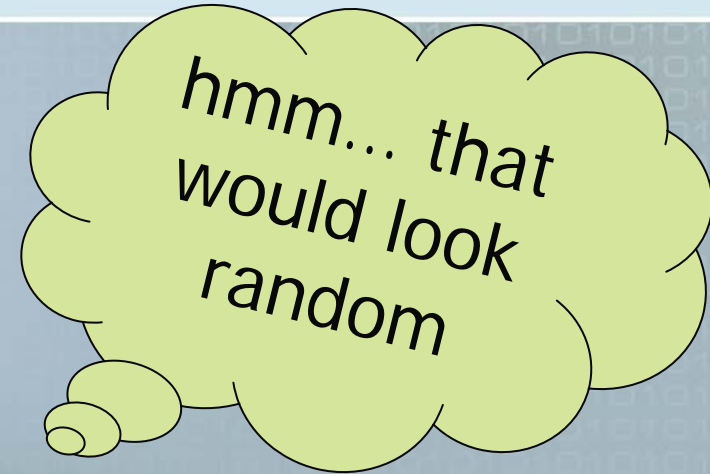


Percentage increase in mortality from long term particulate matter



coal plant effect

Number of years until an additional death from PM



- 15 for all causes of death
- 38 for heart disease
- 233 for chronic lower respiratory disease



Ground Level Ozone

- Unable to estimate
 - Regional models, no point source models
- However
 - Same equation
 - Similar increase in criteria pollutant components





Recommendation:

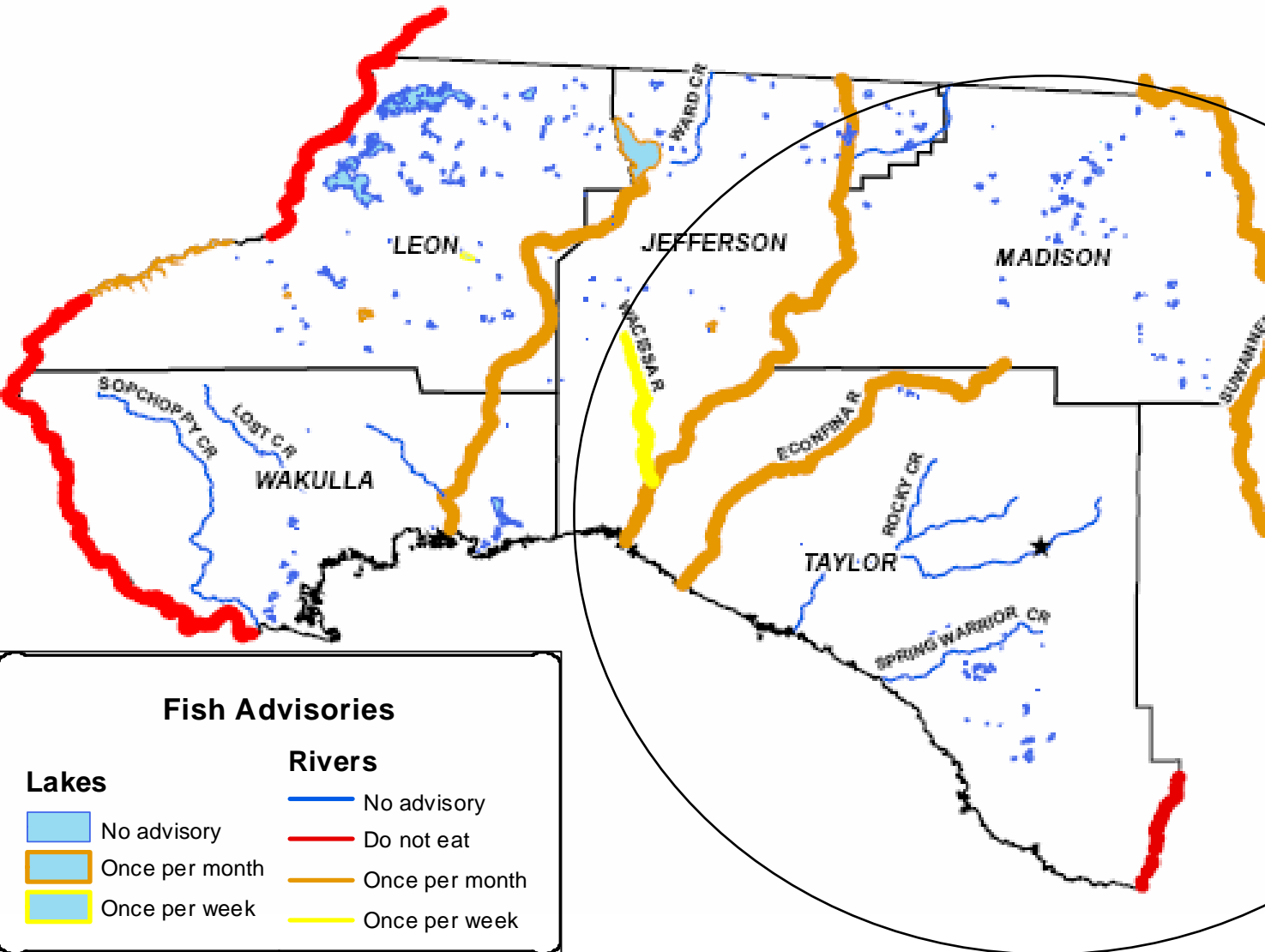
Air quality monitor

Mercury Emissions

- Coal major contributor to mercury
- Bioaccumulates in fish
- Potent neurotoxin in sufficient quantities



Reactive Gas Mercury



- Advisories for women of childbearing age and children.
- Highest alert for any fish species.
- Circle= 50 km radius from the coal plant, local deposits of reactive gas mercury from the plant.



Recommendation:

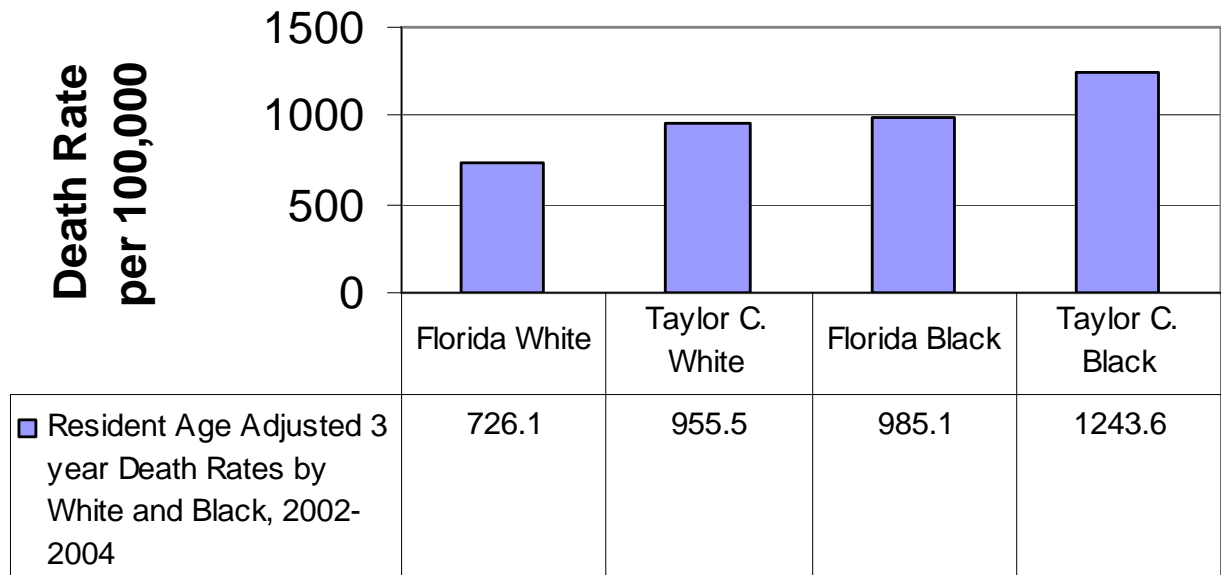
Baseline mercury testing with follow-up
and education



Employment Impacts

Inverse relationship

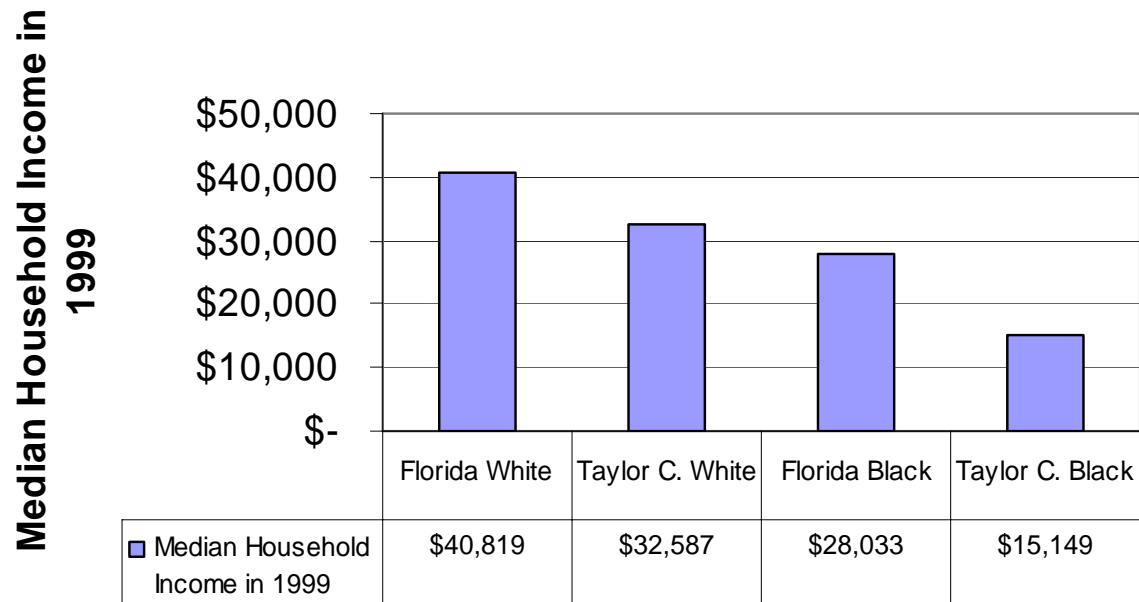
Resident Age Adjusted 3-Year Death Rates by White and Black, 2002-2004



■ Source: Florida Charts www.floridacharts.com

Inverse relationship

Median Household Income for the State and Taylor County by White and Black Race in 1999

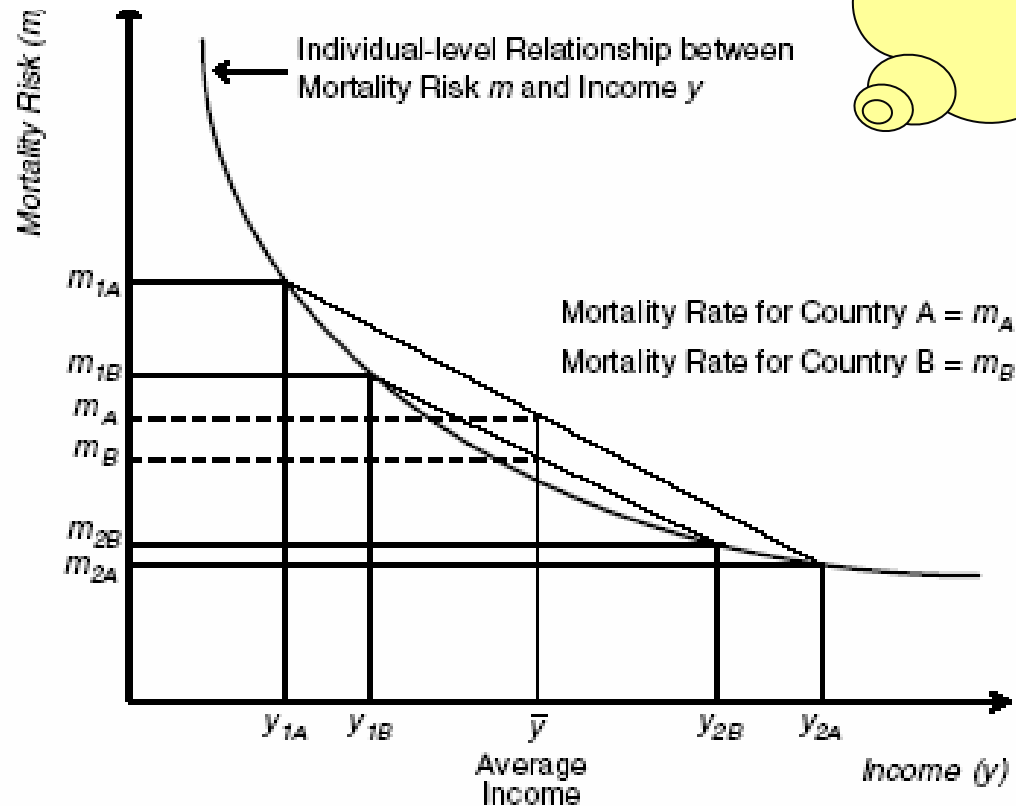


■ Source: 2000 US Census

Methods

Wealth
is Health

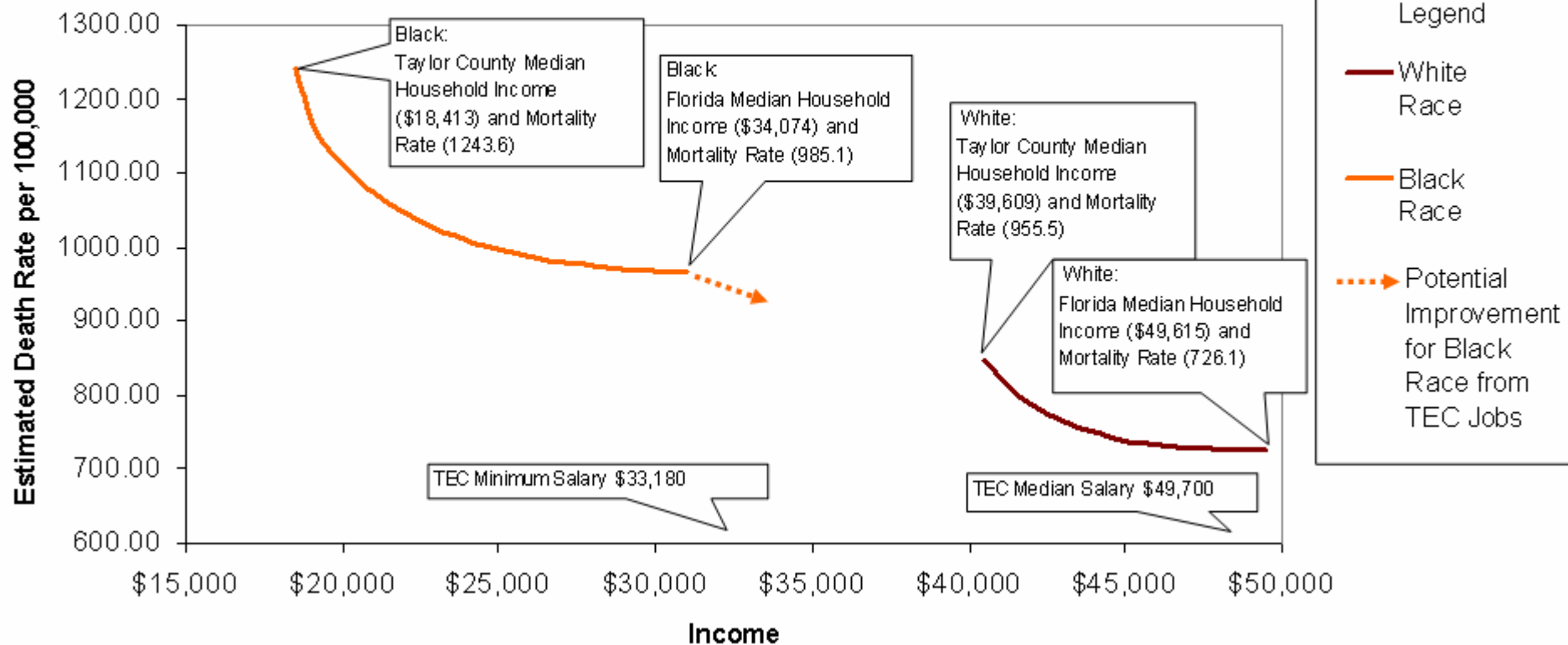
Figure 1: Relationship between average income and mortality risk.



Source: Lynch et al. 2004, Subject to copyright

Potential decrease in mortality rates by changing income (2006 dollars)

Estimated Curves of the Relationship of Mortality Rates and Median Household Income by Race



Individual Risk of Death by Race for TEC Minimum Income \$33,180 (2006 dollars)

Employee Race	Number of Employees	Current Individual Risk for Death (mortality rate per 100,000)	Forecasted Individual Risk of Death (mortality rate per 100,000) with TEC Minimum Salary of \$33,180	Maximum Forecasted Deaths Averted per Year for the TEC Employees*	Maximum Forecasted Years Until One Death is Averted for the TEC Employees
Black	66	1243.6	965.1	0.184	5.44
White	66	955.5	955.5	0	0
Black	33	1243.6	965.1	0.092	10.88
White	33	955.5	955.5	0	0

* Race specific age-adjusted death rates were unavailable for these calculations. Employees are working age and healthier than the total population. Employees individual risk of death is probably less than the total mortality rate.

Individual Risk of Death by Race for TEC Median Income \$49,700 (2006 dollars)

Employee Race	Number of Employees	Current Individual Risk fo Death (mortality rate per 100,000)	Forecasted Individual Risk of Death (mortality rate per 100,000) with TEC Median Salary of \$49,700	Maximum Forecasted Deaths Averted per Year for the TEC Employees*	Maximum Forecasted Years Until One Death is Averted for the TEC Employees
Black	10	1243.6	965.1 or lower	0.028	35.91
White	10	955.5	727.5	0.023	43.86
Black	5	1243.6	965.1 or lower	0.014	71.81
White	5	955.5	727.5	0.011	87.72

* Race specific age-adjusted death rates were unavailable for these calculations. Employees are working age and healthier than the total population. Employees individual risk of death is probably less than the total mortality rate.

Caveats

- Forecasts = central tendency
- Assumptions
- Limitations





Recommendation:

Recruit, train and hire a diverse workforce

Smoking Attributable Deaths 2003

- 103 deaths in Taylor County
- 23 of those deaths were to causes of death associated with tobacco use
- 22% percent of the deaths that occurred in 2003 are attributable to tobacco use.





Recommendation:

Smoking cessation
and economic development

Climate Change

- Biggest negative impact
- Emerging research on health and CO2
- Supreme court decision forthcoming
- Threats to coastal communities and sea level rise





Recommendation:

Ecological footprint to be carbon neutral



Informed Decisions ~ Enhanced Development

Thank You!

WWW.HEALTHYDEVELOPMENT.US