



## The “Value” of an Hour of Daylight

Dear Legislative Interim Committee,

### CORE ISSUE:

The Daylight Savings Time (DST) issue before the Legislative Interim Committee can be precisely and succinctly summarized as this:

***Is an hour of daylight most VALUABLE to the state’s residents and businesses in the early morning...or in the evening?***

### WHICH HOURS ARE TO BE COMPARED?

Although the simulation at the Clark Planetarium that the Legislative Interim Committee has seen shows the sky becoming light at 3:30 a.m. in midsummer without DST, the following table takes a more conservative approach: The table below defines the first and last hours of “usable,” valuable light by adopting Utah’s codified requirement for the use of automobile headlights. Per Utah code, automobile headlights must be on from a half hour after sunset to a half hour before sunrise. If an automobile can operate without headlights, it reasons that the light is sufficient for most “valuable” activities. Therefore, the hour-long blocks of time in the table below represent the following:

- A half hour with sun up, and
- A half hour with sun down, but with usable light still present.
- Sunrise or sunset precisely in the middle of the hour block.

The following table contrasts the “trade-off” hours by comparing the following:

- The first hour of light that we would get in the morning if DST is abolished.
- The last hour of daylight we currently enjoy with DST.

MONTH	FIRST HOUR OF LIGHT (without DST)	LAST HOUR OF LIGHT (with DST)
March 15 <sup>th</sup>	6:10 am -- 7:10 am	7:03 pm -- 8:03 pm
April 15 <sup>th</sup>	5:20 am – 6:20 am	7:36 pm – 8:36 pm
May 15 <sup>th</sup>	<b>4:41</b> am – 5:41 am	8:07 pm – 9:07 pm
June 15 <sup>th</sup>	<b>4:26</b> am – 5:26 am	8:30 pm – 9:30 pm
July 15 <sup>th</sup>	<b>4:39</b> am – 5:39 am	8:28 pm – 9:28 pm
August 15 <sup>th</sup>	5:08 am – 6:08 am	7:57 pm – 8:57 pm
September 15 <sup>th</sup>	5:38 am – 6:38 am	7:08 pm – 8:08 pm
October 15 <sup>th</sup>	6:09 am – 7:09 am	6:18 pm – 7:18 pm
<b>RANGE FOR ALL DST MONTHS</b>	<b>4:26 am – 7:10 am</b>	<b>6:18 pm – 9:30 pm</b>
	Least “Valuable”	VERSUS
		Most “Valuable”

In the next section I propose “values” against which the worth of an hour of light can be evaluated. Whatever merit system the Interim Committee uses to value the time that daylight is available, I am confident that the committee will conclude that evening light from 6:18 pm to 9:30 pm is exponentially more “valuable” and usable than light wasted too early in the morning when most folks are asleep between 4:26 am and 7:10 am, which is when it would get light if DST were to be abolished.

## **VALUE:**

The “value” of an evening daylight hour to the state’s residents and businesses includes the following value categories:

- **Physical Health:** Which of the two alternative hours of daylight is more available to residents for healthful physical activity and vitamin-D producing exposure to the sun?
- **Mental Health:** I trust the OED will have provided you with scientific information affirming that available daylight plays a significant role in mental health, depression, and anxiety. If OED did not provide you with mental-health benefits of DST, please contact me.
- **Safety:** During which of the alternative time blocks are people more active, driving more, and engaged in most activities that are safer done in the light?
- **Outdoor recreation opportunities:** Which hour of daylight is most usable to residents for outdoor recreation activities, both paid recreation and free recreation? When are businesses open that serve outdoor recreation?
- **Family togetherness time:** Are early morning or evening hours more valuable for families to gather together and enjoy bonding outdoor activities that require daylight?
- **Exercise:** Do most people wish to exercise outdoors from 4:30 am to 6:00 am or in the early evening hours?
- **Energy Use:** During non-daylight (dark) hours, which of the alternative hours would residents and businesses be more likely to use artificial-light energy?
- **Business success and opportunities:** How many businesses are open at 4:30 am? Or 6 am? How many businesses are open until 7 pm? Or 9 pm? In which time block would citizens be more likely to patronize a business?

## **WHY A POPULAR VOTE ABOUT DST IS A BAD IDEA:**

Although at the writing of this document, the Governor’s Office of Economic Development’s report to the committee is not complete, I can confidently state that the economic information in the EOD’s report will overwhelmingly prove the economic and health benefits of DST. Voters are not informed about the data that the Legislative Interim Committee has been given.

Example: In a ballot initiative, how many voters would choose the following?

- Abolish taxation?
- Abolish speed limits?
- Legalize use of illicit or recreational drugs?

Votes on these issues could undoubtedly pass a popular referendum, but this extreme example demonstrates that not all societal issues can be (nor should be) reasonably decided by a poll. Abolishment of DST should not be determined by popular vote!

## **ANSWERS TO THE FOLLOWING QUESTIONS MUST BE CONSIDERED BY THE INTERIM COMMITTEE:**

- Why did the federal government EXPAND DST in 2007 via the Energy Policy Act to save 1% of energy?
- What information and research is/was at the disposal of the federal government that they used nine years ago to determine the value of and need for EXTENDED DST?

- What is the value of 1% of Utah's energy use? One percent of billions of dollars is tens of millions of dollars.
- What will be the harmful economic Impact to Utah's recreation-based businesses if DST is abolished?
- Why have previous attempts to abolish DST failed miserably so many times in the past?
- Why do 48 of 50 states observe DST? What is unique about the climate and latitude of AZ and HI?
- Why does Russia use a 2-hour DST shift for maximizing the valuable evening hours?

I trust that OED has provided the Legislative Interim Committee with answers to ALL these questions and/or that the Legislative Interim Committee has done its own research into ALL of these issues. If not, please contact me.

### **CONCLUSION:**

The value of daylight during the evening hours from 6:18 pm to 9:30 pm is exponentially more "VALUABLE" to Utah's businesses and recreationists than would be daylight block starting at 4:30 am without DST.

I encourage the Legislative Interim Committee to consider the preponderance of evidence and economic information supporting Daylight Savings Time and make the correct, prudent decision to KEEP Daylight Savings Time for the benefit and health of Utah residents and businesses. Please do not encourage legislation to abolish DST.

Sincerely,

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Appendix attachments:

- Table of BUSINESSES and GROUPS who benefit from DST and those who don't
- About the author and personal anecdotes.

## Appendix

### GROUPS AND BUSINESSES BENEFITING FROM DST (AND THOSE THAT DON'T):

Groups and Businesses <b>BENEFITING</b> from DST	Groups and Businesses <b>WITHOUT DST</b> benefits
Full-time employees who recreate after working hours.	<i>Young mothers trying to maintain a consistent, early bedtime for young children regardless of daylight.</i>
Active individuals trying to maintain health	<i>Morning exercisers during the 2 hottest months.</i>
Restaurants that cater to active individuals	<i>Some Gardeners</i>
Golf courses and golfers	
Hikers	
Bikers	
Swimmers (in outdoor pools and in natural waters)	
Families with school-age children that recreate together outdoors	
Runners and Joggers	
Fishermen	
Businesses that serve outdoor recreationists. Fly shops, Bike stores, Waterparks, Pools,	
Amusement Parks	
Farmers	
High School Athletes in spring and fall sports (need light for both games and practices) (soccer, golf, lacrosse, track, football, baseball, etc)	
Boaters, waterskiers, and wakeboarders	
Recreation areas	
State Parks and National Parks	
Kids who play (and practice) little-league sports	
48 of the 50 states in the USA and <b>every</b> state with a climate and latitude like Utah's	
Federal Government	
Utah's summer tourist industry	
Hunters	
Dog walkers	
Persons suffering from depression, anxiety, and/or light-deficiency related illnesses.	
Diabetics	
Participants in outdoor hobbies	
Local businesses that do business nationally with businesses in other states	
This list of businesses and recreationists that benefit from DST could go on, and on, and on...I encourage the Legislative Interim Committee to fill in additional groups and businesses in both columns.	

The above list is neither exhaustive nor complete, but rather it is a partial list based on my personal brainstorming.

#### About the author:

- **Diabetic in need of exercise:** I am diabetic (type-2) and on the verge of needing insulin. I am committed to manage (and perhaps reverse) the disease through diet and exercise. My varied exercise activities take me outdoors during daylight hours. Therefore, I have an enormous interest in when it is light and when it is dark because my health is dependent upon my outdoor exercise.
- **Father and Husband:** To maintain close family ties, my three sons, my wife, and I enjoyed outdoor recreational activities together, such as golf, fishing, biking, hiking, tennis, etc. I have genuine interest in the daylight hours that are available to me after work to recreate with my family in order to maintain a meaningful relationship with my sons.
- **High School Athletics Booster Club Legal Liaison:** I help a high school and a school district create policies that foster cooperation while maintaining arms-length relationships of high integrity. Many High School sports require daylight in the evenings.
- **Young Single Adult Leader:** I volunteer to lead young single adults in pursuing worthwhile activities, some of which involve outdoor recreation during daylight hours.
- **Aquatic Engineer:** My career is to engineer and design outdoor swimming pools, water parks, splash pads, and other interactive water features. Outdoor pools' operating hours are directly tied with daylight hours. Some lap swimmers enjoy early-morning workouts, while some families like the evening-light "play" hours.
- **Vice President of Trout Unlimited:** As an avid fly fisherman and community volunteer, I champion a conservation effort to restore and protect local cold-water fisheries. Both the morning daylight hours and the evening daylight hours are the two best times to pursue fish and enjoy the sport of fly fishing.
- **Outdoor Writer and Photographer:** In addition to my career as a pool engineer, I am also a professional writer and photographer focusing on outdoor activities, with a strong emphasis on fishing and conservation. My writings appear bimonthly in magazines, and I am writing a book of fiction and poetry. The hours of magic light for photography are early and late in the day.
- **Education:** I hold a BS degree in civil engineering from the University of Utah, where I was elected to student government. I earned a Masters Degree in Business Administration (MBA) from Brigham Young University, where I was elected president of the business school's MBA class. I have graduated with honors in all my education, and I have studied at two universities in Europe.

#### Personal Anecdotes:

- The weekend before the town meeting on July 10, 2014, I needed to be on location for a professional photography assignment at sunrise. I set my alarm for 4:00 am to be able to dress and drive an hours to the site, arriving precisely as the light was ideal for photography. If Utah had not been observing DST, I would have had to set by alarm for 3:00 a.m. to travel one hour to the photo shoot by daybreak.
- On the morning of the town meeting at Clark Planetarium on July 10, 2014, I set my alarm for 6:45 a.m. At 5:00 a.m., daylight streamed through my window, awakened me, and because of the brightness of my room from the daylight, I was not able to fall back asleep. I lost 1.75 hours of sleep that morning from a too-early sunrise.
- As I wrote this paper on the day of the autumnal equinox, September 23, 2014, the sun dropped behind the Oquirrh Mountains at 6:18 p.m. and the Salt Lake Valley was in evening shade and getting darker. If DST were not observed, the SL Valley would have been in the Oquirrh's shadows by 5:18 p.m. on the last day of summer.
- Changing clocks twice a year: My computer changes time itself. My TV changes time itself. My car changes time itself, and my cell phone changes time itself. I manually change the time on my clock-radio alarm, on an analog wall clock, and on my wrist watch. Changing clocks takes me two minutes at most—not a burdensome task. The following mundane tasks take longer than changing clocks: It takes me longer to wheel my garbage cans to the curb weekly. I can re-set all my clocks faster than I can brush my teeth, which I do three times per day.