

Dear Members of the Oregon House Committee on Rules

I am a software engineer and astronomer, with a lifetime of experience in the technical workings of time measurement and time zones. I am writing with great concern for how Daylight Saving Time (DST) has been misunderstood by SB 320's authors and by the State Senate's analysis authors.

Please do all you can to amend SB 320 from pursuing year-round DST to instead restoring year-round Standard Time. Failing that, please introduce (or encourage others to introduce) a new bill to restore year-round Standard Time, and please rally support to oppose the wasteful, dangerous, and undemocratic pursuit of year-round DST.

The bill's authors and the Senate's analysis have failed to acknowledge several points:

1) No poll has shown definitively which time the populace prefers (most people don't know which time is which), but the clear majority wish to stop switching the clock as soon as possible.[A][B][C]

2) The quickest, easiest way to end biannual clock changes (as most people wish) is to restore year-round Standard Time. This could be accomplished in mere months, with no need for Congressional approval. This bill's pursuit instead for year-round DST would require sweeping changes to Federal law by Congress—which would take several years, which might never occur, or which might be reverted (as happened in 1974). SB 320 defies the people's will for an immediate end to clock switches; it is a waste of legislative time and taxpayer money. A return instead to year-round Standard Time would cost nothing and could be enacted this year; it would be an easy win for you as legislators.[D][E][F][G][H][I][J][K]

3) We already tried year-round DST in 1974, and within months it was repealed following several deaths and public outcry against unnaturally late, dark winter mornings.[F][G][H][I][J][K]

4) Sunrise in Oregon would be delayed until as late as 8:57am under year-round DST.[L]

5) DST kills commuting children and adults. Eight children died under year-round DST in 1974 in just one state. 70% of all pedestrian deaths occur under darkness, and 20% of all pedestrians killed are children. Nationwide traffic deaths after switching to DST have been found to increase by 17% (30 lives per year), at a cost of \$275,000,000 annually.[F][G][H][I][J][K][M][N]

6) DST is unhealthy. The incidence of heart attacks has been found to increase by 24 to 50% after switching to DST, and to decrease by 21% after returning to Standard Time. Waking before sunrise increases risks of heart disease, stroke, diabetes, and depression. DST negatively affects cognition, productivity, reaction time, and ability to handle stress, in both children and adults.[O][P][Q][R][S]

7) DST wastes energy and increases carbon emissions, due to increased air conditioning (the main reason Arizona observes year-round Standard Time). When Indiana switched from year-round Standard Time to summertime DST in 2007, annual consumer electricity demand rose 1 to 4%. This jump cost residents an extra \$9,000,000 per year in utilities, and an estimated \$1,700,000 to \$5,500,000 annually in added pollution. Oregon would save millions in energy and pollution costs annually by returning to year-round Standard Time.[T]

8) DST is disruptive to many religious communities. Judaism, for example, calls for morning prayers at sunrise, which would unfairly overlap with work hours under year-round DST.[U][V]

9) DST is comparable to "vanity sizes" in clothing (where a different number is used for the same size, to make consumers feel thinner), and it is just as unsustainable (calls have already begun to delay work hours until 10am, which is only 9am Standard).[W]

10) DST is mistakenly associated with summer's naturally longer days, but no bill can make winter's daylight as long as summer's. Standard Time is an approximation of solar time, which is itself a geometric measurement of nature. Standard Time is the only practical model for timekeeping that is based in reality.[X][Y]

Please, we have a real opportunity to stop the biannual clock changes immediately and at no cost, as most people wish. Year-round Standard Time is simpler and quicker to implement than year-round DST, it would save money and reduce greenhouse gases, it would increase productivity, and it would save lives.

Don't repeat the history of 1974. Amend SB 320 to return Oregon to year-round Standard Time, or introduce a new bill for year-round Standard Time, and stop SB 320 altogether.

Thank you,
J P
Software Engineer & Astronomer

References:

[A]: Naquin, Talia (2019-03-09). "Daylight Saving Time: Should We Spring Forward and Not Fall Back?". 'Fox 8 Cleveland'. "A 2014 Rasmussen poll found that only 33% of people think daylight saving time is 'worth the hassle.'"

[B]: Sistek, Scott (2019-02-20). "Killing Time (Changes): Better to Permanently Keep Daylight Saving Time? Or Standard Time?". 'KOMO News'. "67 percent would favor keeping their clocks on the same time year 'round.'"

[C]: Ballard, Jamie (2019-03-06). "54% of Americans Would Support Ending Daylight Saving Time". 'YouGov'. "A majority (54%) say that they would support the elimination of Daylight Saving Time in all US states and territories."

[D]: Craven, Scott (2019-03-06). "Daylight Saving Time Begins Sunday: Who Observes It, Will It Affect Health?". 'Iowa City Press-Citizen'. "While ditching daylight saving involves a state merely notifying the Department of Transportation, enacting it year-round is more involved, including approval by Congress. A state can not 'permanently' stay on daylight saving time under federal law, the DOT says... Congress has considered bills to allow states to remain on daylight saving time permanently, but they've stalled before legislators in either the House or Senate have had the chance to vote on them."

[E]: Skelton, George (2018-07-05). "Year-Round Daylight Saving Time? More Dark Mornings Is Just One Downside". 'Los Angeles Times'. "Brown was on target when he called it 'a circuitous path.' Converting to daylight saving all year would require a two-thirds majority vote in the Legislature and approval by

Congress, plus signatures of the governor and president. California could stay on standard time all year without Washington's OK, just as Arizona and Hawaii have... Chu says he doesn't actually care whether California goes on year-round daylight saving or standard time. He just wants the state to pick one and stop switching clocks twice a year."

[F]: Merline, John (2018-03-09). "Time to Ditch Daylight Saving Time—It's a Killer That Doesn't Save Energy". 'Investor's Business Daily'. "[T]he U.S. tried year-round daylight saving time in 1974, and abandoned it after several children died in accidents during the winter months because they were going to school in the dark."

[G]: Downing, Michael (2018-03-09). "One Hundred Years Later, the Madness of Daylight Saving Time Endures". 'Smithsonian'. "On Jan. 8, 1974, Richard Nixon forced Floridians and the entire nation into a year-round daylight saving – a vain attempt to stave off an energy crisis and lessen the impact of an OPEC oil embargo. But before the end of the first month of daylight saving that January, eight children died in traffic accidents in Florida."

[H]: Jenkins, Evan (1974-01-31). "Schools Ask End to Daylight Time". 'The New York Times'. "Such visits have combined with complaints from back home to prompt the movement on Capitol Hill for a reversion to standard time. Much pressure has come from Florida, where eight school-age children have been killed in accidents since daylight time was imposed."

[I]: Clark, James C (2018-10-31). "Daylight Saving Year-round: Once a Disaster, Always a Disaster". 'Orlando Sentinel'. "Millions of schoolchildren were going to school in pitch dark, which meant more 16-, 17- and 18-year old drivers on the road in darkness. Accidents soared and schools and parents protested. Eight months after he signed the legislation making daylight saving time permanent, Nixon resigned and soon after that Congress repealed the permanent daylight saving time law."

[J]: Steade, Susan (2016-10-30). "The Year Daylight Saving Time Went Too Far". 'The Mercury News'. "By fall, the dark mornings were apparently wearing on the American people. Proclaiming 'it's for the children'—those scholars standing at bus stops in the predawn—lawmakers threw in the towel of gloom. Year-round DST was scrapped."

[K]: Downing, Michael (2005-08-09). "Endless Summer". 'The New York Times'. "This decision did not soften the blow of the OPEC oil embargo, but it did put school children on pitch-black streets every morning until the plan was scaled back."

[L]: "Astoria Column, Oregon, USA – Sunrise, Sunset, and Daylength" (n.d.). 'Time and Date AS'. "December 27, 2019: Sunrise 7:57 am [Standard Time, add one hour for DST] ... January 8, 2020: Sunrise 7:57 am [Standard Time, add one hour for DST]."

[M]: "For Kids' Sake, Vote No on Year-Round Daylight-Saving Time" (2018-08-18). 'The Mercury News'. "The National Highway Traffic Safety Administration reports that 20 percent of the total number of pedestrians killed in traffic crashes are children up to 14 years old. It also notes that more than 70 percent of all pedestrians killed in traffic accidents occur when it is dark."

[N]: Boynton, Donna (2015-03-06). "Deadly Car Crashes Spike After Changing Clocks for Daylight Saving Time". 'Telegram.com' "[T]here were 302 deaths and a cost of \$2.75 billion over a 10-year period...a 17 percent increase in traffic fatalities."

[O]: Peralta, Jessica (2019-03-08). "Why Daylight Saving Time Makes You Feel Terrible". 'Healthline'. "Hoag completed a two-year-long study on this same topic, and found an increase of 50 percent in heart attack...we took into account all heart attack treatment, from medical management to angioplasty, stent, and bypass."

[P]: Brueck, Hilary (2019-03-06). "Daylight-Saving Time Is Literally Killing Us". 'Business Insider'. "Just a coincidence? Probably not. Doctors see the opposite trend in the fall: The day after we turn back the clocks, heart attack visits drop 21%."

[Q]: O'Callaghan, Lauren (2016-10-09). "Early Riser? Waking Up Before Sunrise Increases Risk of a Stroke". 'Express'. "When the sun rises, the body's melatonin - the hormone which helps people sleep naturally - is naturally suppressed. At the same time, the body's internal cortisol levels, which gives people energy, rise. These hormones are disrupted when a person is forced to wake up instead of waking up naturally. An imbalance of these hormones is linked to an increased risk of strokes, heart disease, diabetes and depression."

[R]: Medina, Diana; Ebben, Matthew; Milrad, Sara; Atkinson, Brianna; Krieger, Ana C (2015-08-15). "Adverse Effects of Daylight Saving Time on Adolescents' Sleep and Vigilance". 'Journal of Clinical Sleep Medicine'. "Sleep duration declined by an average of 32 minutes on the weeknights post-DST... Vigilance significantly deteriorated...resulting in longer reaction times and increased lapses. Increased daytime sleepiness was also demonstrated."

[S]: "Impact of Daylight Savings on Productivity" (n.d.). 'COFCO'. "Not surprisingly, there are very significant health implications. We all know that when we are not sleeping well or not getting enough sleep, we tend to be more stressed and less able to handle the ups and downs of life with equanimity."

[T]: Kotchen, Mathew J; Grant, Laura E (2008). "Does Daylight Saving Time Save Energy? Evidence from a Natural Experiment in Indiana". 'The National Bureau of Economic Research'. "Our main finding is that -- contrary to the policy's intent -- DST increases residential electricity demand. Estimates of the overall increase are approximately 1 percent, but we find that the effect is not constant throughout the DST period. DST causes the greatest increase in electricity consumption in the fall, when estimates range between 2 and 4 percent. These findings are consistent with simulation results that point to a tradeoff between reducing demand for lighting and increasing demand for heating and cooling. We estimate a cost of increased electricity bills to Indiana households of \$9 million per year. We also estimate social costs of increased pollution emissions that range from \$1.7 to \$5.5 million per year. Finally, we argue that the effect is likely to be even stronger in other regions of the United States."

[U]: "Orthodox Group Asks Congressman to Withdraw Year-round Daylight Time Bill" (1972-07-19). 'Jewish Telegraph Agency'. "[Y]ear-round daylight saving time would create a major problem for religious Jews. According to Jewish religious law, the earliest time for morning prayers is one hour before sunrise. As a result, during winter time, prayers cannot begin before 6:15 a.m., the Agudath Israel officials explained. By advancing the clock one hour, the observant Jew would not be able to begin his morning prayers until 7:15 a.m. The Agudath Israel spokesmen said this would 'create an anomalous situation for thousands of religious Jews who must be at work prior to 8 or 8:30 a.m.'"

[V]: Eller, Sandy (2018-03-13). "Florida's Proposed Change to Permanent Daylight Savings Time Could Create Halachic Problems for Jewish Community". 'Vos Iz Neias?'. "[Year-round DST] could wreak havoc

on morning minyanim, explained Rabbi Moshe Matz, executive director of Agudath Israel of Florida, with neitz hachama, the earliest time to daven Shmone Esrai, taking place as late as 8:05 during the winter. 'If you are a worker or have to drive carpool you are going to need to rely on leniencies when it comes to davening,' Rabbi Matz told VIN News. 'There will be days when you won't be able to even put on tallis and tefillin until after 7:30.' The proposed changes would also create inconveniences for Florida's Jewish community. 'Because Shabbos will be finishing later, people who want to fly out of Florida on Motzei Shabbos will have trouble finding flights,' observed Rabbi Matz. 'Businesses and restaurants who earn much of their livelihood by opening up on Motzei Shabbos will lose significant amounts of business.'"

[W]: Stoneham, Bray (2017-01-10). "Starting Work Before 10am Is Comparable to 'Torture', Study Reveals". 'Australian Men's Health'.

[X]: Bryner, Jeanna (2019-03-07). "Daylight Saving Time 2019: A Guide to the When, Why, What and How". 'Live Science'.

[Y]: "The Equation of Time" (2017-08-10). 'The United States Naval Observatory'.

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