

# Testimony

## **\*Against\***

### Bill HF72 as of Feb 3th 2021

Feb 4th 2021 8:30 AM

at Committee State Government Finance and Elections

Laetitia MOREAU

- Minnetrista MN 55364
- Master of Science, MBA

## TWO WAYS OF GETTING RID OF TIME CHANGES

Today:  
seasonal DST  
With Time changes

### If Current HF72 passes and federal law changed

Advanced standard time  
-dramatic increase of dark mornings  
frequency  
-no more time changes but harmful  
time advance kept

### A better idea

### A new bill allowed by federal law

Natural standard time  
(everybody within 30 minutes of solar time) =  
current standard time of Minnesota

-less dark mornings  
-less very late sunsets  
-no more time changes

### Days of sunrise after 8:15AM

St Paul: 0 days  
Fergus Falls: 0 days

### Latest sunrise

St Paul: 7:51 AM  
Fergus Falls: 8:08 AM

## WRONG WAY

Dark mornings bill  
= current HF72

St Paul: **88 days**  
Fergus Falls: **110 days**  
20-30% a year

### Latest sunrise

St Paul: 8:51 AM  
Fergus Falls: 9:08 AM

St Paul: 0 days  
Fergus Falls: 0 days  
0% a year

### Latest sunrise

St Paul: 7:51 AM  
Fergus Falls: 8:08 AM

## A BETTER WAY

Natural time 365 bill  
= opportunity

Against HF72 02/03/2021 LM

## TWO WAYS OF GETTING RID OF TIME CHANGES

### WRONG WAY

#### Dark mornings bill

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### A BETTER WAY

#### Natural time 365 bill

### Permanent Advanced standard time

- An egregious failure in 1974
- mornings accidents and crime (deaths of kids, seniors, bikers, pedestrians)
- unequal benefits
- increased harm to poor and vulnerable
- increased harm to **WESTERN populations of the State**
- source of sleep deprivation, lowers ingenuity, immunity, health, life expectancy, increases health costs
- lowers productivity
- Increases gas consumption and heating bills
- +Keeps high bills of seasonal dst (no savings despite the name)

### Permanent Natural standard time

- A public benefit in terms of safety, health and climate.
- Approved by PTAs, National and international medical associations.
- It would bend home bills down
- it would lower carbon emissions
- It would protect sleep and **immunity in March against covid19.**

Sources and references attached.

# References Testimony

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# Sleep is very important, related to immunity, resistance to disease and cancer, ingenuity, positive and peaceful attitudes and long happier life

-CNBC (2020) Dr. Fauci: 3 everyday things you can do to help boost your immune system

<https://www.cnn.com/2020/09/18/dr-fauci-how-to-help-keep-your-immune-system-healthy.html>

-2020 Larenas-Linnemann Enhancing innate immunity against virus in times of COVID-19: <https://pubmed.ncbi.nlm.nih.gov/33072240/>

-Prather AA (2015) , Janicki-Deverts D, Hall MH, Cohen S: Behaviorally assessed sleep and susceptibility to the common cold. Sleep. 2015, 38:1353–1359 <https://pubmed.ncbi.nlm.nih.gov/26118561/>.

-Berk M, Dodd S, Hallam K, Berk L, Gleeson J, Henry M. (2008) “Small shifts in diurnal rhythms are associated with an increase in suicide: The effect of daylight saving”. Sleep Biol Rhythms. 2008;6(1):22–25. <https://doi.org/10.1111/j.1479-8425.2007.00331.x>

# “Advanced time rhymes” with “sleep deprived”

Osea Giuntella, Fabrizio Mazzonna; Sunset Time and the Economic Effects of “Social Jetlag” Evidence from US Time Zone Borders; Journal of Health Economics (May 2019), ISSN: 1879-1646, Vol: 65, Pages: 210-226; <https://doi.org/10.1016/j.jhealeco.2019.03.007>

A Summary here [https://www.heure-ete.net/CP\\_20190520\\_EN.pdf](https://www.heure-ete.net/CP_20190520_EN.pdf)

When comparing population across the border of a time zone, separated by a few miles and 1 hour on the clock, the researchers found that the population with the advanced time fared badly compared to the other population on the other side.

1 hour ahead on the clock	
19 minutes less sleep per night \$ 82 additional health expenses / person 11% more likelihood of being overweight + 19% heart attacks	- 3% wages \$ 23 lost daily productivity / person 21 % more likelihood of obesity + 5% breast cancer

yearly

## Scientists have data and consensus to recommend permanent natural standard time and not permanent advanced time

-AASM (2020), “American Academy of Sleep Medicine calls for Elimination of Daylight Saving Time”. Press release and position statement, <https://aasm.org/american-academy-of-sleep-medicine-calls-for-elimination-of-daylight-saving-time/>

-European Biological Rhythms Society; European Sleep Research Society; Society for Research on Biological Rhythms. (2018) “Letter to the EU Commission on DST. Accessed August 26, 2020.  
[https://esrs.eu/wp-content/uploads/2019/03/To\\_the\\_EU\\_Commission\\_on\\_DST.pdf](https://esrs.eu/wp-content/uploads/2019/03/To_the_EU_Commission_on_DST.pdf)

-Canadian Society for Chronobiology (2019). “The CSC recommends the switch to permanent Standard Time”. accessed November 2020 <http://www.chronobiocanada.com/>

-Meridians and natural standard times were designed scientifically and agreed in 1884 at the Washington conference  
<https://www.gutenberg.org/files/17759/17759-h/17759-h.htm>

## Advanced time costs and increases carbon emissions Already in the summer only, to be worse in the winter

### ***“Summer Daylight saving increases electricity bills”***

-National Bureau of Economic Research, Kotchen & Grant (2008), Does Daylight Saving Time Save Energy ? Evidence from a Natural Experiment in Indiana: <http://www.nber.org/papers/w14429>  
Published also by Yale and MIT - <https://environment.yale.edu/kotchen/pubs/revDSTpaper.pdf>  
and Centre for Economic Policy Research. <https://voxeu.org/article/does-daylight-saving-time-save-electricity>

### ***“Summer Daylight saving pollution and fuel consumption in Europe”:***

-Hecq, Borisov, Totte (1993) “Daylight saving time effect on fuel consumption and atmospheric pollution”, Science of The Total Environment, Volume 133, Issue 3, [https://doi.org/10.1016/0048-9697\(93\)90248-5](https://doi.org/10.1016/0048-9697(93)90248-5)

### ***“-“Daylight saving increases gasoline consumption.”*** cited in NYT of 2016

<https://www.nytimes.com/2016/03/12/us/daylight-saving-time-farmers.html> &  
[https://web.archive.org/web/20180602145802if/http://www.convenience.org/Media/press\\_releases/2010/pages/pr1008102.aspx#.WxKwms37Tb0](https://web.archive.org/web/20180602145802if/http://www.convenience.org/Media/press_releases/2010/pages/pr1008102.aspx#.WxKwms37Tb0)

### ***-ACHED (2019), “letter to the United Nations for climate sake, let’s reduce the advance of clock time vs standard time”***

<https://www.heure-ete.net/letter20190910AG.pdf>



## States are happy under permanent Natural standard time

***Arizona does not want DST***

<https://cronkitenews.azpbs.org/2019/11/01/arizona-daylight-saving/>

***Summer Daylight would increase air conditioning costs in Arizona***

<https://ui.asu.edu/content/why-arizona-opts-out-daylight-saving-time>

## Americans prefer permanent (Natural) standard time

-AP-NORC Associated Press-NORC Center for Public Affairs Research (2019), “Daylight Saving Time vs Standard Time”:

<https://apnorc.org/projects/daylight-saving-time-vs-standard-time/>

# Kids bloom with later start times, not with Advanced time Advanced time leads to accidents and crime in the dark mornings

## **Kids bloom with later school start times, not with Advanced standard time**

-Skeldon AC, Dijk DJ. (2019) "School start times and daylight saving time confuse California lawmakers". Curr Biol. 2019;29(8):R278–R279. <https://doi.org/10.1016/j.cub.2019.03.014>

## **Accidents, fatalities and dark mornings under Advanced time See also under Nixon in 1974**

### **Eagan Kid died on a dark morning under DST in November 2019**

-Star Tribune, November 2, 2019, Eagan boy, 13, killed after bicycle struck by car  
<http://www.startribune.com/eagan-boy-13-killed-after-bicycle-struck-by-car/564227232/?refresh=true>

## **Crime and dark mornings under Advanced time**

### **Advanced time with darker morning will mean more crime opportunities in the morning**

-A Minneapolis man of 72 just shot last week at 7:30am before sunrise  
<https://www.startribune.com/man-72-shot-and-critically-wounded-in-minneapolis-seward-neighborhood/600012112/>

**In 1974, Nixon experimented permanent Advanced time  
The experiment was abandoned swiftly  
The Federal law forbids States to do it again**

The US tried permanent Advanced standard time in 1974. While the idea was initially supported by the population, its popularity quickly plummeted during the first winter. Several children died on their way to school, the public complained about the unnaturally late, dark mornings, and the experiment was ended within six months instead of the two years planned duration.

-Advancement of time or changeover dates Act of 1973, 15 U.S. Code § 260a

<https://uscode.house.gov/view.xhtml?path=/prelim@title15/chapter6/subchapter9&edition=prelim>

-Ripley (1974). "Senate Votes Return to Standard Time for Four Months and Sends Bill to Ford". The New York Times.

<https://www.nytimes.com/1974/10/01/archives/senate-votes-return-to-standard-time-for-four-months-and-sends-bill.html>

# HF72, the House status as of Feb 3 2021

HF 72 Status in the House for the 92nd Legislature (2021 - 2021)		
<a href="#">Current bill text: As Introduced</a> <a href="#">Add HF 72 to MyBills</a> <a href="#">Version List</a> <a href="#">Long Description</a>	<a href="#">Companion: SF149</a> <a href="#">Companion Text</a> <a href="#">Senate Search</a> <a href="#">Further Committee Actions</a>	<a href="#">Revisor number: 21-00470</a> <a href="#">House Research Summary</a> <a href="#">Fiscal Notes</a>

## Description

Advanced standard time/daylight saving time provided year-round effective upon federal law authorization.

## Authors (6)

[Freiberg](#); [Stephenson](#); [Garofalo](#); [Lucero](#); [Demuth](#); [Nelson, M.](#)

## Actions

Separated  Chronological

### House

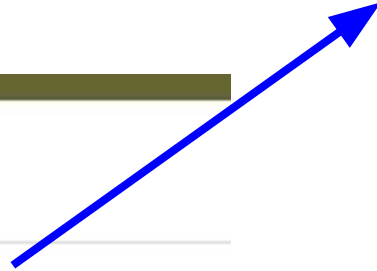
01/11/2021	Introduction and first reading, referred to <a href="#">State Government Finance and Elections</a>	pg. <a href="#">70</a> <a href="#">Intro</a>
01/19/2021	Authors added Stephenson, Garofalo, and Lucero	pg. <a href="#">161</a>
01/28/2021	Author added Demuth	pg. <a href="#">251</a>
02/01/2021	Author added Nelson, M.	pg. <a href="#">284</a>

# HF72, the House Research Summary as of Feb 3 2021

A single sheet of paper

Revisor number: 21-00470

House Research Summary  
Fiscal Notes



Bill Summary  
**H.F. 72**  
As introduced

Subject Daylight saving time  
Authors Freiberg and others  
Analyst Matt Gehring  
Date January 27, 2021

#### Summary

This bill recognizes advanced standard time (also known as daylight saving time) as the official standard of time for the state, year-round. The change is effective upon enactment of a federal law which authorizes states to make this change.

The effect of the change would be to recognize "summer" hours year-round—more daylight in the evenings, and less in the mornings.

Federal law currently authorizes states to choose to not recognize daylight saving time (so, the state would stay on winter's "standard" hours year-round) but does not authorize states to do the reverse—stay on summer's "saving" hours year-round. The year-round summer hours is what is proposed by this bill.

Adjustments to the official time have on-and-off been required or authorized in federal law since World War I; the current system of daylight saving time has been in place since 1966. The specific date on which clocks are changed was last adjusted in 2005.

# HF72, fiscal note as of Feb 3 2021

Fiscal Note

2021-2022 Legislative Session

HF72 - 0 - Daylight Savings Time Standard Year-Round

Chief Author: Mike Freiberg  
Committee: State Government Finance and Policy  
Date Completed: 1/25/2021 1:00:03 PM  
Agency: MN.IT Services

State Fiscal Impact	Yes	No
Expenditures		X
Fee/Departmental Earnings		X
Tax Revenue		X
Information Technology	X	
Local Fiscal Impact		X

This table shows direct impact to state government only. Local government impact, if any, is discussed in the narrative.  
Reductions are shown in parentheses.

State Cost (Savings)	Bicennium		Bicennium	
	FY2021	FY2022	FY2023	FY2024
Dollars in Thousands				
Total	-	-	-	-
Bicennial Total	-	-	-	-

Full Time Equivalent Positions (FTE)	Bicennium		Bicennium	
	FY2021	FY2022	FY2023	FY2024
Total	-	-	-	-

LBO Analyst's Comment:

I have reviewed this fiscal note for reasonableness of content and consistency with the LBO's Uniform Standards and Procedures.

LBO Signature: Joe Hamry Date: 1/25/2021 1:00:02 PM  
Phone: 651-224-4433 Email: joe.hamry@soo.leg.mn

State Cost (Savings) Calculation Details

This table shows direct impact to state government only. Local government impact, if any, is discussed in the narrative.  
Reductions are shown in parentheses.  
\*Transfers in/Out and Absorbed Costs are only displayed when reported.

State Cost (Savings) = 1-2	Bicennium		Bicennium	
	FY2021	FY2022	FY2023	FY2024
Dollars in Thousands				
Total	-	-	-	-
Bicennial Total	-	-	-	-
1 - Expenditures, Absorbed Costs*, Transfers Out*				
Total	-	-	-	-
Bicennial Total	-	-	-	-
2 - Revenue, Transfers In*				
Total	-	-	-	-
Bicennial Total	-	-	-	-

Bill Description

This bill relates to standards of time and provides for advance standard time (daylight saving time) year-round effective upon authorization by federal law (amendment to United States Code, title 16, section 260a, or another applicable law which authorizes states to observe advanced standard time year-round). The bill will amend Section 1, Minnesota Statutes 2000, section 645.071. The bill would apply to all departments of state government, all counties, cities and towns.

Assumptions

- MNIT will be responsible for assessment of IT Systems and Software of agencies subject to IT consolidation.
- MNIT DOT office has provided an estimate based on 475 applications supporting DOT. The statewide fiscal impact is an extrapolation of this.
- Applications primarily synchronize with Network Time Protocol (NTP) and less at the application code layer. Also there is more diversity in how applications are hosted for NTP (e.g., by the State, CAAS, hybridmix, etc.) and synchronize for time.

Expenditure and/or Revenue Formula

Much of the state's application portfolio would likely accept new time zone rules and changes from large vendors (i.e. Microsoft, Cisco, etc.). The estimated implementation investment would be for coordinating, testing and validating assumptions to reduce potential adverse system availability impacts to Minnesotans.

- For project management, development/security changes, testing and release.
- For small- to medium-sized software development costs to address or mitigate compatibility issues between the new time format rules and existing software.

With such a large and complex ecosystem, large fixes discovered in the assessment and implementation will increase the investment need and would benefit from a set-aside contingency budget.

Vendor changes and potential ongoing cost increases passed along to the state are unknown.

MNIT is responsible for approximately 2,850 applications across the state's enterprise application portfolio. Implementation investment would range from \$3 million to \$6 million for procurement and additional resources.

	\$500	\$1000
DOT's Apps	475	475
All Apps	2,850	2,850
Cost/DOT App	\$1	\$1
Cost/All Apps	\$3.032	\$6.063

An updated estimate will need to be refined during the assessment.

Long-Term Fiscal Considerations

An updated estimate will need to be refined during the assessment and timing of authorization of the federal law.

Local Fiscal Impact

The bill when enacted would apply to counties, cities and towns. These local government entities all will need to determine costs based on how many IT applications they have.

References/Sources

Agency Contact:

Agency Fiscal Note Coordinator Signature: Uma Venkat  
Phone: 651-201-1215

Date: 1/25/2021 12:50:01 PM  
Email: uma.venkat@state.mn.us

# Agenda as of Feb 3rd 2021

8:30 AM

House

## State Government Finance and Elections

**Location:** Remote Hearing  
**Chair:** Rep. Michael Nelson



[Calendar](#)  
[Permalink](#)

### Agenda:

[HF72](#) (Freiberg) Advanced standard time/daylight saving time provided year-round effective upon federal law authorization.

[HF66](#) (Bahner) Legislative Commission on Cybersecurity established, and legislative appointments provided.

[HF35](#) (Elkins) Website Accessibility Grant Advisory Council established, and money appropriated for grants to cities and counties to improve website accessibility.

\*Agenda items may be added or removed.

# Documents provided for meeting as of Feb 3rd 3PM

## **Committee Documents:**

State Gov -- 2-4-2021 Agenda

HF72-0 Completed FN

Reformer-Daylight Savings Time

HRD -- HF0035

HRD -- HF0072

HRD -- HF0066

AMC LMC Letter of Support for HF35

HF66-0 Completed FN

Note at the time  
of this image,  
this document  
was yet to be  
attached



# Provided by authors of HF72 current bill ONE news paper article!


Annotated below by LM  
Original from the agenda

1/29/2021

After we turn the clocks forward this spring, we should leave them that way - Minnesota Reformer

## After we turn the clocks forward this spring, we should leave them that way

By Steve Calandrello - March 3, 2020



Reset spring forward on fall back again.

Editor's note: The Minnesota Legislature is currently considering legislation to end the twice-per-year practice of moving the clocks forward and back.

In my research on daylight saving time, I have found that Americans don't like it when Congress messes with their clocks.

In an effort to avoid the biannual clock switch in spring and fall, some well-intended critics of DST have made the mistake of suggesting that the abolition of DST – and a return to permanent standard time – would benefit society. In other words, the U.S. would never "spring forward" or "fall back."

They are wrong. DST saves lives and energy and prevents crime. Not surprisingly, then, politicians in Washington and Florida have now passed laws aimed at moving their states to DST year-round.

Congress should seize on this momentum to move the entire country to year-round DST. In other words, turn all clocks forward permanently. If it did so, I see five ways that Americans' lives would immediately improve.

### 1. Lives would be saved

Simply put, darkness kills – and darkness in the evening is far deadlier than darkness in the morning.

**But also lives would be lost**

<https://minnesotareformer.com/2020/03/03/after-we-turn-the-clocks-forward-this-spring-we-should-leave-them-that-way/>

1/3

1/29/2021

After we turn the clocks forward this spring, we should leave them that way - Minnesota Reformer

The evening rush hour is twice as fatal as the morning for various reasons: Far more people are on the road, more alcohol is in drivers' bloodstreams, people are hurrying to get home and more children are enjoying outdoor, unsupervised play. Fatal vehicle-on-pedestrian crashes increase threefold when the sun goes down.

DST brings an extra hour of sunlight into the evening to mitigate those risks. Standard time has precisely the opposite impact, by moving sunlight into the morning.

A meta-study by Rutgers researchers demonstrated that 3.43 lives per year could be saved by moving to year-round DST. The opposite effect would occur if the U.S. imposed year-round standard time.

### 2. Crime would decrease

Darkness is also a friend of crime. Moving sunlight into the evening hours has a far greater impact on the prevention of crime than it does in the morning. This is especially true for crimes by juveniles, which peak in the after-school and early evening hours.

Criminals strongly prefer to do their work in the darkness of evening and night. Crime rates are lower by 30 percent in the morning to afternoon hours, even when those morning hours occur before sunrise, when it's still dark.

A 2013 British study found that improved lighting in the evening hours could reduce the crime rate by up to 20 percent.

### 3. Energy would be saved

Many people don't know that the original justification for the creation of DST was to save energy, initially during World War I and then later during the 1973 OPEC oil crisis. When the sun is out later in the evening, peak energy loads are reduced.

Virtually everyone in our society is awake and using energy in the early evening hours when the sun sets. But a considerable portion of the population is still asleep at sunrise, resulting in significantly less demand for energy then.

Having more sun in the evening requires not just less electricity to provide lighting, but reduces the amount of oil and gas required to heat homes and businesses when people need that energy most. Under standard time, the sun rises earlier, reducing morning energy consumption, but only half of Americans are awake to be able to use the sun.

This rationale motivated some in California to recommend permanent DST a decade ago, when the state experienced recurrent electricity shortages and rolling brown-outs. Officials at the California Energy Commission estimated that 3.4 percent of California's winter energy usage could be saved by moving to year-round DST.

Similarly, DST resulted in 150,000 barrels of oil saved by the U.S. in 1973, which helped combat the effect of OPEC's oil embargo.

### 4. Avoiding clock switches improves sleep

Critics of DST are correct about one thing: The biannual clock switch is bad for health and welfare.

**No, intent is not enough.**  
**Studies show spree.**  
**yes, the Spring one in particular but time advance deprives**

<https://minnesotareformer.com/2020/03/03/after-we-turn-the-clocks-forward-this-spring-we-should-leave-them-that-way/>

2/3

1/29/2021

After we turn the clocks forward this spring, we should leave them that way - Minnesota Reformer

It weeks have with people's sleep cycles. Heat attacks increase 2.1 percent in the week after the U.S. "springs forward" in March. There's even an uptick during the week in November when the clocks "fall back."

If that's not bad enough, a study from 2000 shows that the major financial market indexes NYSE, AMEX and NASDAQ average negative returns on the Monday trading day following both clock switches, presumably because of disrupted sleep cycles.

Critics of biannual clock switching sometimes use these points to argue in favor of permanent standard time. However, I think it's important to note that these same sleep benefits are available under year-round DST, too. Plus, standard time doesn't offer the energy or lifesaving or crime prevention effects of DST.

### Business for few, harm for many

### 5. Recreation and commerce flourish in the sun

Finally, recreation and commerce flourish in daylight and are hampered by evening darkness.

Americans are less willing to go out and shop in the dark, and it's not very easy to catch a baseball in darkness either. These activities are far more prevalent in the early evening than they are in the early morning hours, so sunlight is not nearly as helpful then.

Not surprisingly, the U.S. Chamber of Commerce as well as most outdoor recreational interests favors extended DST.

Research shows that sunlight is far more important to Americans' health, efficiency and safety in the evening than it is in the early morning. That's not to say there aren't downsides to DST – notably, an extra hour of morning darkness. But I believe the advantages of extended DST far outweigh those of standard time. It is past time that the U.S. sets the clocks forward forever, and never has to switch them again.

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Steve Calandrello  
<https://www.law.uva.edu/directory/steve-calandrello>  
Jeffrey B. Davis Business Professor of Law, University of Washington

<https://minnesotareformer.com/2020/03/03/after-we-turn-the-clocks-forward-this-spring-we-should-leave-them-that-way/>

3/3