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October 15, 2013

Chairperson Graham Gillette
Vice-Chairperson David A. Carlson
Ms. Leslie A. Gearhart
Mr. Marc R. Wallace
Ms. Susan R. Huppert

Des Moines Water Works
2201 George Flagg Parkway
Des Moines, Iowa 50321

Dear Chairperson Gillette and Board of Water Works Trustees:

I write on behalf of the Pew children's dental campaign to share information about water fluoridation as you explore this topic in your community.

Having worked with many lawmakers and experts committed to dental health for children, we welcome the opportunity to provide you with information that we hope will be of use to you in your deliberations. Untreated tooth decay can undermine children's ability to eat, sleep, grow, and learn.¹ A 2011 study found that schoolchildren with oral health problems are more likely to miss class and perform poorly.² A 2012 study revealed that teens with toothaches were four times more likely to have a low grade point average than their peers.³

Fluoridation benefits people of all ages, including adults.⁴ Seniors benefit from fluoridation partly because it helps prevent decay on the exposed root surfaces of teeth—a condition that especially affects older adults.⁵ In fact, the Florida Department of Elder Affairs has noted:

*"Because older Americans are now keeping their teeth longer, fluoride will continue to be even more important for preventing tooth decay in this age group. Older Americans are especially susceptible to tooth decay because of exposed root surfaces and mouth dryness that may result from many of the medications they might be using to treat certain chronic conditions."*⁶

Fluoridation reduces the incidence of decay by about 25 percent over a person's lifetime.⁷ As you may know, fluoride is a mineral that exists naturally in water.⁸ Fluoridation is simply the process of adjusting fluoride to the optimal level that prevents tooth decay. Fluoride counteracts tooth decay and strengthens teeth from harmful acids and helps draw calcium and other minerals back into the enamel. Drinking water is an ideal vehicle for fluoride because it offers these benefits without requiring families to spend extra money or change their routine. At a time when many families lack dental insurance, this form of decay prevention is especially crucial.

Even in an era when fluoride toothpaste is widely used, fluoridated water still provides critical, added protection. Research from the past few years demonstrates this benefit:

- Within the past three years, studies in Alaska and New York have demonstrated that fluoridated water helps to protect teeth from decay.⁹ The Alaska study revealed that children living in non-fluoridated areas had a 32 percent higher rate of decayed, missing or filled teeth than kids in fluoridated communities.
- A 2010 Nevada study examined teenagers’ oral health and found that living in a non-fluoridated community was one of the top three factors associated with high rates of decay.¹⁰
- A 1998 study of communities in Illinois and Nebraska found that children in the fluoridated town had a tooth decay rate that was 45 percent lower than the rate among kids in the non-fluoridated communities. This benefit occurred even though the vast majority of children in *all* of these communities were using fluoridated toothpaste.¹¹

The American Academy of Pediatrics, the American Dental Association, the Institute of Medicine and many other respected medical and health organizations support fluoridation.¹² The U.S. Centers for Disease Control and Prevention (CDC) has praised water fluoridation as one of “10 great public health achievements of the 20th century.”¹³ The American Water Works Association points out that “water providers undergo thorough and extensive training to safely apply fluoride in the amount recommended by the world’s most respected public health authorities.”¹⁴

Compare these credible, science-based sources with the kinds of assertions that anti-fluoride groups make. For example, some claim that the fluoride added to water is a “toxic” waste by-product, but the evidence does not back them up. First, all fluoride additives are required to meet strict quality and safety standards.¹⁵ Second, PolitiFact—an independent fact-checking service—investigated the “toxic” claim and two other common arguments used by anti-fluoride activists. PolitiFact found that each one of these claims was deceptive.¹⁶

Many of the studies cited by anti-fluoride groups were conducted in other nations under conditions that do not reflect how water is fluoridated in the United States.

For example, anti-fluoride groups claim that fluoride causes lower IQ scores in children, but many of the studies they cite were from areas in China, Mongolia and Iran in which the *natural* fluoride levels were at least four or five times higher than the level used to fluoridate water in Des Moines. One study included fluoride levels that reached as high as 11.5 milligrams per liter—a concentration that is roughly 10 times higher than the level that is used to fluoridate American communities. In addition, the Harvard researchers who examined these IQ studies found that each of the studies “had deficiencies, in some cases rather serious, which limit the conclusions that can be drawn.”¹⁷ Furthermore, the Harvard researchers publicly distanced themselves from the way that anti-fluoride groups were misrepresenting these IQ studies, noting that the results do not allow one to make any judgment regarding possible risk from fluoridation in the U.S..¹⁸

As the Centers for Disease Control and Prevention notes, “For many years, panels of experts from different health and scientific fields have provided strong evidence that water fluoridation is safe and effective.”¹⁹ Residents of St. Louis, Denver, Chicago, and many other U.S. cities have consumed fluoridated water for more than 50 years. If the safety concerns raised by anti-fluoride groups were valid, researchers would likely have seen ample evidence of it by now.

In these tough fiscal times, cities and states are increasingly looking for ways to save money. Research shows that water fluoridation offers perhaps the greatest return-on-investment of any public

health strategy. By reducing the need for fillings and tooth extractions, fluoridation saves money for families and taxpayers. Consider these facts:

- For most cities, every \$1 invested in water fluoridation saves \$38 by reducing the need for fillings and other dental treatments.²⁰
- A Texas study in 2000 confirmed that the state saved \$24 per child, per year in Medicaid expenditures because of the cavities that were prevented by fluoridated water.²¹
- A 2003 study estimated that Fort Collins, Colorado—which then had a population of nearly 101,000—saved about \$429,000 each year by fluoridating its water.²² Researchers estimated that in the same year, Colorado saved nearly \$149 million in unnecessary health costs by fluoridating public water supplies: an average savings of roughly \$61 per person.²³
- By protecting the enamel of teeth, fluoridation makes it less likely that decay will occur and develop into more serious dental problems that drive people to hospital emergency rooms (ERs)—where treatment is expensive and taxpayers shoulder much of this cost. More than 830,000 Americans were treated in ERs during 2009 for preventable dental conditions.²⁴

It's important that everyone understand the solid scientific evidence that supports fluoridation. More facts about this public health practice are available at www.iLikeMyTeeth.org/fluoridation—a website supported by a coalition of organizations including Pew and the American Academy of Pediatrics.

If you have any questions or need additional information, please feel free to contact me or Pew's Elizabeth Barajas-Román at 202-540-6845 or ebarajasroman@pewtrusts.org. Thank you very much for your consideration.

Sincerely,

A handwritten signature in black ink that reads "Shelly Gehshan". The signature is written in a cursive, flowing style.

Shelly Gehshan, Director
Pew children's dental campaign

Sources:

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- ² S.L. Jackson et al., “Impact of Poor Oral Health on Children’s School Attendance and Performance,” *American Journal of Public Health* (October 2011), Vol. 101, No. 10, 1900-1906, <http://ajph.aphapublications.org/doi/abs/10.2105/AJPH.2010.200915>.
- ³ “Poor Oral Health Can Mean Missed School, Lower Grades,” Ostrow School of Dentistry of USC, August 2012, <http://dentistry.usc.edu/2012/08/10/poor-oral-health-can-mean-missed-school-lower-grades/>.
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- ⁶ “Fluoride Helps Prevent Tooth Decay,” *Elder Update*, Florida Department of Elder Affairs (November-December 2005) 5, accessed on August 29, 2011 at <http://www.doh.state.fl.us/family/dental/senior/ElderUpdateNovDec05.pdf>.
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- ¹⁰ M. Ditmyer, G. Dounis, C. Mobley and E. Schwarz, “A case-control study of determinants for high and low dental caries prevalence in Nevada youth,” *BMC Oral Health*, (2010), Vol. 10, No. 24, <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2989299/>.
- ¹¹ R.H. Selwitz et al., “Dental caries and dental fluorosis among schoolchildren who were lifelong residents of communities having either low or optimal levels of fluoride in drinking water,” *Journal of Public Health Dentistry*, (Winter 1998) Vol. 58, No. 1, 28-35, <http://www.ncbi.nlm.nih.gov/pubmed/9608443>.
- ¹² “Protecting All Children’s Teeth (PACT),” a training module by the American Academy of Pediatrics, accessed on Jan. 20, 2011 at http://www.aap.org/oralhealth/pact/ch6_intro.cfm; “Fluoride & Fluoridation,” American Dental Association, accessed on Jan. 12, 2011 at <http://www.ada.org/fluoride.aspx>; *Improving Access to Oral Health Care for Vulnerable and Underserved Populations*, Institute of Medicine (2011), 63, http://books.nap.edu/openbook.php?record_id=13116.
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²⁴ Pew Center on the States. (2012) "A Costly Dental Destination," <http://www.pewstates.org/research/reports/a-costly-dental-destination-85899379755>.