

Michigan Department of Community Health

Oral Health Program

Community Water Fluoridation Plan



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Overview of Community Water (CWF) Fluoridation in Michigan

Grand Rapids, Michigan was the birthplace of community water fluoridation for the world, and this preventive practice has since been recognized as one of the 10 great achievements in public health of the 20th century [CDC 1999a].

Community water fluoridation is the process of adjusting the natural fluoride concentration of a community's water supply to a level that is best for the prevention of dental caries. In the United States, community water fluoridation has been the basis for the primary prevention of dental caries for 60 years [CDC 1999a].

It is an ideal public health method because it is effective, eminently safe, inexpensive, requires no behavior change by individuals, and does not depend on access or availability of professional services. Water fluoridation reduces or eliminates disparities in preventing dental caries among different socioeconomic, racial, and ethnic groups.

Fluoridation helps to lower the cost of dental care and dental insurance and helps residents retain their teeth throughout life [USDHHS 2000a].

Not only does community water fluoridation effectively prevent dental caries, it is one of very few public health prevention measures that offer significant cost saving in almost all communities [Griffin et al. 2001]. About every \$1 invested in community water fluoridation saves \$38 in averted costs. The cost per person of instituting and maintaining a water fluoridation program in a community decreases with increasing population size.

Recognizing the importance of community water fluoridation, *Healthy People 2010* Objective 21-9 aims to "Increase the proportion of the U.S. population served by community water systems with optimally fluoridated water to 75%." In the United States during 2006, approximately 184 million people (69.2% of the population served by public water systems) received optimally fluoridated water [CDC 2008].

While Michigan exceeds the level of fluoridation set forth by HP2010, there are geographic disparities in community water fluoridation. Fluoridation is at its highest in the Southern Lower Peninsula and the Central Upper Peninsula. Conversely, fluoridation is relatively low in the Northern Lower Peninsula and the Western Upper Peninsula (Figure 1). Wells drilled for private use are currently untested for fluoride on a routine basis.

In Michigan, approximately 7,293,618 people received fluoridated water in 2009, representing almost 92% of the population served by public water systems.

There are currently 1481 public water systems in Michigan ranging from populations of 25 in small mobile home parks to large cities such as Detroit servicing 900,000 people. 569 systems add fluoride, while 912 do not. 39 of these systems have sufficient natural levels of fluoride so adjusting is unnecessary. 863 systems have populations less than 1000. Water systems with populations over 1000 that currently are not fluoridating account for 428,836 people not receiving the benefits of fluoride. Funding is available in 2010 and 2011 for communities wishing to purchase equipment to use to initiate a fluoridation program.

80% of Michigan residents are served by community water supplies. Many areas of Michigan are rural areas with families having private wells. Most of these wells have below optimal levels of fluoride for oral health. MDCH and the Michigan Oral Health Coalition will plan a community awareness campaign to educate the rural public on testing their private wells for fluoride.

For additional information on water fluoridation data in Michigan link to <http://www.cdc.gov/fluoridation>. For specific information on fluoridation data for Michigan, link to <http://apps.nccd.cdc.gov/MWF/Index>

MDCH Fluoridation Infrastructure

The Oral Health Program has a .5 FTE state position as a Fluoridation Coordinator. The remaining .5 FTE is devoted to oral health education activities. This position is funded the CDC Cooperative Agreement. Oversight and management of drinking water is a state responsibility managed by the Department of Natural Resources and Environment (DNR-E). Fluoridation activities, however, are jointly managed by the state oral health program and DNR-E.

The responsibilities of the state Fluoridation Coordinator is to meet the requirements of the CDC Cooperative Agreement. Activities related to this include:

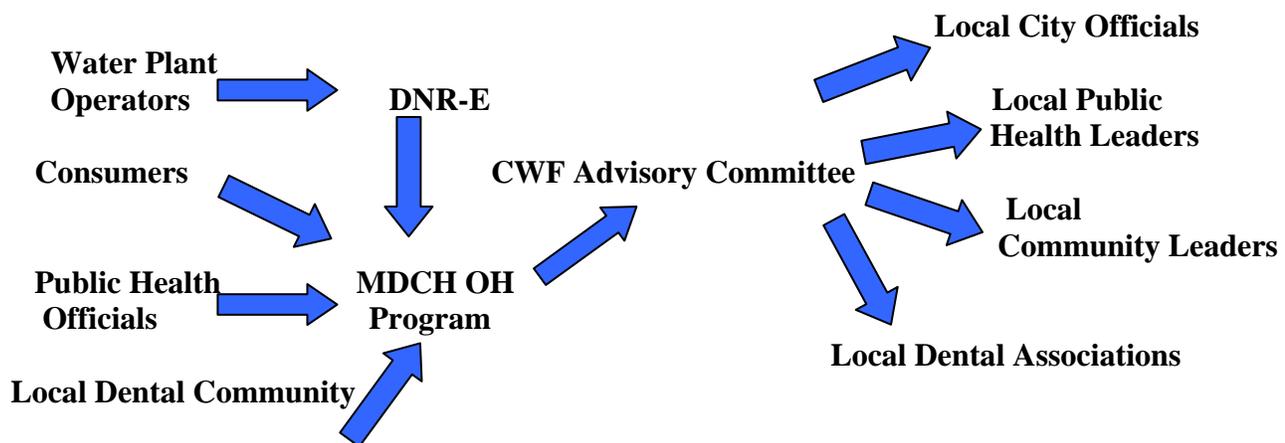
- Monitor and report on a monthly basis water fluoridation data, consistent with the Water Fluoridation Reporting System
- Submit WFRS report number 510 annually
- Promote and implement a state fluoridation program
- Maintaining consistency of fluoridation efforts within a state
- Develop and update a state fluoridation plan and submit annual status reports
- Track progress toward incorporating into practice the CDC Engineering and Administrative Recommendations for Water Fluoridation (EARWF) or DNRE equivalent
- Report on water systems receiving new or replacement fluoridation equipment and the communities and populations affected
- Measure and report progress towards exceeding *Healthy People* objective of 75 percent of population on public water supplies receiving fluoridated water
- Establish and monitor the CWF quality control program and utilization evaluation for continuous program improvement
- Provide appropriate education and promotion of CWF
- Identify communities that could benefit from community water fluoridation
- Identify communities and populations requiring replacement fluoridation equipment and develop replacement plan by funding source

- Involve the State CWF Committee to respond to communities seeking inquiry as to the alleged harm and benefits of CWF

Collaborative Partners

While the fluoride operation and reporting is the responsibility of the state, continued advocacy for community fluoridation requires many collaborative partners. To assist in educating, advocating, and providing scientific evidence on the benefits of community water fluoridation (CWF), a CWF Advisory Committee was formed. The CWF Advisory Committee is composed of water plant engineers, consumers, educators, dental professionals, physicians, and a myriad of other stakeholders from across the state. The CWF Advisory Committee has been very effective in mobilizing in the various geographic areas where anti-fluoridationists actively campaign against CWF. This Committee is now a part of the Michigan Oral Health Coalition.

The communication network for alerting the CWF Advisory Committee when communities are considering stopping fluoridation feeds to the community water supply is represented in the diagram below.



Quality Assurance

Quality assurance for drinking water safety is the direct responsibility of the Department of Environmental Quality. The MDCH Oral Health Program does participate in the quality assurance of fluoridation by entering and analyzing the data from DNR-E that is populated into the WFRS system. DNR-E and MDCH are currently developing the QA plan. Components of the developing plan include:

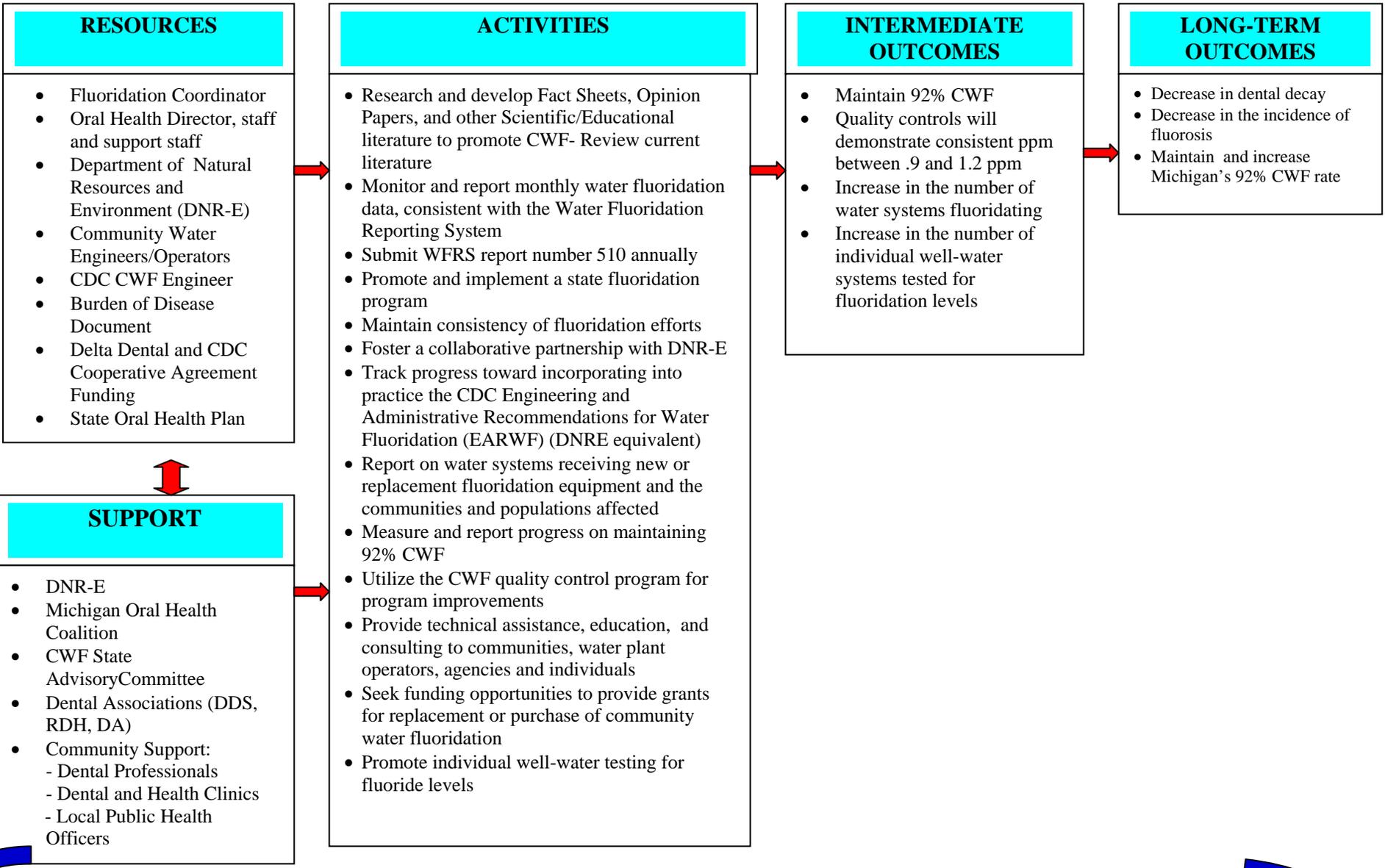
- Monitor and report on a monthly basis water fluoridation data, consistent with the Water Fluoridation Reporting System
- Submit WFRS report number 510 annually
- Maintaining consistency of fluoridation efforts within a state

- Track progress toward incorporating into practice the CDC Engineering and Administrative Recommendations for Water Fluoridation (EARWF) (DNRE equivalent)
- Report on and identify water systems receiving new or replacement fluoridation equipment and the communities and populations affected
- Education of water system operators and engineers in CWF.

Evaluation

MDCH uses a systematic comprehensive evaluation system for all of its programs. Utilizing evaluation results in continuous quality improvement. Review of the Fluoridation Plan, effectiveness of the CWF, WFRS reporting, and participant surveys are just a few of the tools to complete the evaluation. The CWF Logic Model and Evaluation Plan are listed below. The comprehensive MDCH Oral Health Program 5-Year Evaluation Plan can be found in its entirety in MOLAR or through the Oral Health Program at MDCH. www.michigan.gov/oralhealth

LOGIC MODEL	MDCH COMMUNITY WATER FLUORIDATION
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Systematic and Comprehensive Evaluation for Continuous Quality Improvement

Related Michigan Oral Health Plan (SOHP) Goals

Primary Goal: Goal 2: Implement evidence-based preventive practices that maintain optimal oral health for Michigan communities. Action Step: Support preventive oral health measures to include: Community water fluoridation

Related CDC Cooperative Agreement Work Plan Goals: Five-Year Work Plan Recipient Activity #5

Objective 5b: Access to and Utilization of Preventive Interventions – Community Water Fluoridation

Evaluation Question	what type of data you will need	where you will get the data	how you will get the data	when you will collect the data	what you will do with the data	when and how you will share results	who will get this done	Evaluation completed (give date, initials of who completed it, and any comments)
1. Update the state fluoridation plan and submit annual status reports	<ul style="list-style-type: none"> • WFRS data • DNR-E FI reports • Epi information on FI. • Activity of FAC 	<ul style="list-style-type: none"> • DNR-E • Epi surveil. Data • WFRS 	Request from DNR-E -Request from WFRS	At least annually	Submit annual status reports to FAC, MDCH, DNR-E	<ul style="list-style-type: none"> • CDC Annual Reports • Burden of Disease Document • Surveil. Annual Report 	<ul style="list-style-type: none"> • Epi • OH Flu Cood. • OH Director 	
2. Conduct and report monthly monitoring consistent with the Water Fluoridation Reporting System (WFRS). Submit 510 report with interim reports	DNR-E data	DNR-E	<ul style="list-style-type: none"> • MOU from DNR-E provides exchange of data 	Annually (or quarterly depending on DNR-E)	<ul style="list-style-type: none"> • Populate WFRS • 510 Report from WFRS 	<ul style="list-style-type: none"> • CDC Annual Reports • WFRS data posted on CDC website 	OH Flu Cood.	

3. Track progress toward incorporating into practice the CDC Engineering and Administrative Recommendations for Water Fluoridation (EARWF) (DNRE equivalent)	<ul style="list-style-type: none"> • EARWF standards • Current fl plan 	DNR-E	Request from DNR-E	Request at quarterly meetings	Populate WFRS	Note in MOLAR	OH Flu Coord, DNR-E	
4. Report on water systems receiving new or replacement fluoridation equipment and the communities and populations affected	Water systems receiving new or replacement equip.	Request from DNR-E	Request from DNR-E	DNR-E annual report	Incorporate into the MI fl plan	Note in St. Fl Plan	OH Flu Coord, FAC	
5. Measure and report progress towards reaching or exceeding <i>Healthy People</i> objective of 75 percent of population on public water supplies receiving fluoridated water	MI exceeds HP objectives with a 92% fl rate	MI exceeds HP objectives with a 92% fl rate	MI exceeds HP objectives with a 92% fl rate	MI exceeds HP objectives with a 92% fl rate	MI exceeds HP objectives with a 92% fl rate	MI exceeds HP objectives with a 92% fl rate	MI exceeds HP objectives with a 92% fl rate	
6. Enhance or expand existing community water fluoridation program management to a comprehensive level that meets or exceeds Healthy People objectives	MI exceeds HP objectives with a 92% fl rate	DNR-E	Request from DNR-E	Annually	Share data with Fl Advisory Committee (FAC) and develop plans to increase fluoridation	Annually and if fluoridation of a water system is precarious – share through the FAC	OH Flu Coordinator	
7. Encourage attendance by state fluoridation coordinator, engineers and/or specialists at CDC fluoridation training or equivalent within 5 years	# of attendees from MI	DNR-E and MDCH	Request from DNR-E; check MDCH program files	Annually	Encourage water plant engineers to attend	Annually with FAC and semi-annually with DNR-E meetings	OH Flu Coordinator	
8. Conduct comprehensive inspections of all adjusted fluoridated water systems every three years to assure that all the	Inspection data from DNR-E (Sanitation Survey)	DNR-E	Request from DNR-E	Annually	Keep on file and share with Fl Advisory Co	Annually with FAC	OH Flu Coordinator	

technical recommendations, including the safety requirements of EARWF, are followed								
9. Increase percent of fluoridated water systems consistently maintaining optimal levels of fluoride as defined by State and consistent with recommendations outlined in EARWF	MI exceeds HP objectives and EARWF standards with a 92% fl rate; DNR-E annually sends list of water systems and monthly fluoride levels to MDCH	DNR-E	Request from DNR-E	Annually	Share data with FAC and develop plans to increase fluoridation	Annually with FAC	OH Flu Coordinator	
10. Promote fluoridation to policymakers and the public as appropriate.	Fluoridation statewide rates Evidence of council meetings visited by FAC or FI Coord Evidence of conferences & displays on fluoridation to public operators	DNR-E and WFRS FI Coord; calendar of visits; Spreadsheet with council visits and displays	DNR-E FI Coord	Annually	Work with Michigan Oral Health Coalition (MOHC) to advocate for fluoridation; provide assistance to municipalities facing a fluoridation vote; public service marketing in areas of non-fluoridation	Annually with FAC and MOHC	OH Flu Coordinator	
11. Establish a CWF quality control program	Inspection data, equipment data, and fluoridation rates from DNR-E	DNR-E	DNR-E	Annually	Continue to promote MI in success of CWF	Promoting CWF; FAC; MOHC	OH Flu Coordinator DNR-E FAC MOHC	
12. Provide appropriate education and promotion of CWF	Fluoridation statewide rates;	DNR-E and WFRS; FI Coord; FAC	DNR-E; Calendar dates for promotion	Annually	Work with Michigan Oral Health Coalition	Annually with DNR-E, FAC, MDCH and	OH Flu Coordinator, FAC	

	Evidence of promotion visits; Evidence of training dates; Evidence of display presentations.		visits and meetings Number of presentations; displays # of materials diss		(MOHC) to advocate for fluoridation; provide assistance to municipalities facing a fluoridation vote; public service marketing in areas of non-fluoridation	MOHC		
13. Identify communities that, if fluoridated, would enable state to meet or exceed the Healthy People objective	MI exceeds HP objectives with a 92% fl rate	DNR-E; WFRS	Lists from DRN-E; WFRS	Annually	Promote fluoridation to those communities	Annual Report	OH Flu Coordinator, DNR-E	
14. Identify communities and populations requiring replacement fluoridation equipment and develop replacement plan by funding source	List of communities that require replacement equipment	DNR-E; WFRS; Communities with interest	DNR-E; WFRS; MDCH	Annually	Work with Delta Dental, (MOHC), and other collaboratives to identify funding sources for replacement equipment. Offer grant reimbursements for new and replacement equipment to encourage continued CWF	Annually with DNR-E, MOHC, FAC and other collaborative partners	OH Flu Coordinator, FAC, DMR-E	
15. External Evaluation of program	Data from all objectives	DNR-E; WFRS; Oral Health program	Annual reports	Once every three years	Continue to promote safety and health benefits of CWF	MOHC; public; dental health professionals	OH Flu Coordinator Outside EPI Support, FAC	

Process-related Evaluation Questions:

1. Does the dollar amount of resources expended for prevention and the amount of disease averted by prevention, greater than the expected costs associated with the disease had it not been averted?
2. What are the challenges associated with coordinating and implementing a limited community water fluoridation program management system?

2010-11 Community Water Fluoridation 1-5 Year Workplan
Revised 10/2010

GOAL: Community Water Fluoridation Program- To promote a quality Community Water Fluoridation Program through the State with the Oral Health Program and the Department of Natural Resources and Environment (DNR-E).

Objective:	Activities:	Time Frame:	Progress:	Performance Measures:	Person(s) Responsible
A. Update State Fluoridation Plan that implements CDC grant requirements and submit requested reports.	1. Susan to develop draft copy of state fluoridation plan and discuss with State Fluoridation Committee.	Annually	10-10 Updated Plan and workplan	State Fluoridation Plan approved by Committee	Susan Deming, CWF Coordinator State Fluoridation Committee(FAC)
	2. Implement State Fluoridation Plan	2009-2014	10-10: Some aspects of SFP have begun to be implemented. Will be described in objectives below.	Each aspect SFP will have been addressed and progress recorded.	Susan Deming
	3. Reports sent to CDC	2009-2014	10-10: Activities and progress are being entered on monthly basis into MOLAR	Reports submitted as per CDC request.	Susan Deming, Christine Farrell, OHP Director
B. Monitor monthly fluoride levels on basis consistent	1. Collaborate with DNR-E on receiving monthly data from	2009-2014	10-10: Progress has been made. We are receiving data from all 8 water	25% increase by 2014 of fluoridated water systems that provide	Susan Deming, Pat Cook-DNR-

with WFRS.	each water system on their fluoride levels.		districts 1 X yr and this is entered into WFRS. We are in discussion of trying to receive this data at least biannually. DNR-E still not ready to implement monthly reports being sent to Oral Health Program.	monthly fluoride level readings to the Oral Health Program	E
	2. Monitor levels for optimal oral health benefits based on current literature and recommendations of CDC, AAPD, and EARWF standards.	Ongoing	10-10: Michigan currently has their optimal levels set at .9-1.2ppm in WFRS.	Levels are reset to current recommended levels in WFRS	Susan Deming Pat Cook
C. Track Progress of incorporating CDC EARWF practices. (DNRE equivalent)	1. Collaborate with DNR-E on getting evidence of EARWF practices being inspected by DNR-E on a routine basis.	2009-2014	10-10 DNRE has own standards set for MI consistent with EARWF CWF coordinator has copy of standards. Receive Sanitation Survey results from DNRE on 3 yr basis	Evidence submitted from DNR-E to Oral Health Program on a three year cycle showing progress in meeting EARWF/DNRE goals.	Susan Deming Pat Cook
D. New or replacement equipment to communities looking to add fluoridation	1. Acquire funding	2010-2011	10-10: Did not receive HRSA workforce grant to help fund this. Delta Dental has given \$60,000 fro 2011	Funding acquired and allocated for 2010 project.	Susan Deming
	2. Identify systems in need of new or replacement equipment	Nov 08- Jan 2014	10-10: Identified water systems without fluoridation. Assume these all would need new	List of non fluoridated systems in database	Susan Deming

			equipment.	RFP will be sent to all systems	
	3. Develop a 2011 RFP for process for distribution of funds.	Aug 2010	10-10 2010 RFP Awards distributed 8-10 2011 RFP developed and approved 10-10 2011 RFP released	All 2010 systems with awards up and operational within 6 months of grant end period	Susan Deming
	4. Track and evaluate number of systems fluoridating as result of funding.	Jan 2011	10-10 Fluoridation Program report will reflect this.	100% of funded grantees are operational for fluoridation within 6 months of grant end period	Susan Deming
E. Meet Healthy People 2010/2020 goal of 75% of population on Community Water Fluoridation	1. Support efforts of communities wishing to implement CWF	Jan 2009-2014	10-10: We are presently at 91.7% . Goal is met but plan on continued success.	Maintain at least 75% of population under CWF	Susan Deming
	2. Identify communities that would need CWF to reach Healthy People objective	Jan 2009-2014	10-10: Non fluoridated communities have been identified and populations determined.	List of non fluoridated areas in MI available through WFRS and OHP database	Susan Deming
F. Education and Promotion of Community Water Fluoridation	1. Integrate oral health education into state fluoridation training for water treatment operators and engineers, Local PPW directors, and other municipal utility organizations.	2009-2014	10-10: Susan presented at 5 regional operator meetings on fluoridation in 2009. Will request presence again in 2011. Still trying to integrate oral health into DNRE trainings on fluoridation	Yearly integration into DNR-E's water treatment training schedule	Susan Deming

	2. CDC fluoridation training for 1 State District Engineer per year when funds available.	2010-2014	10-10 One District Engineer from Wyoming attended the 2010 CDC training New OHP Director and MDA representative attended Oct 2010 training	4 district engineers will have attended the CDC fluoridation training in Tennessee or Sacramento by 2014	Susan Deming
	3. Brochure on fluoridation and supplements for health and dental professionals developed and disseminated through FAC	Aug 2011	10-10 Survey of 300 dentists, hygienists, and nurses at Infant Oral Health Summit asking about knowledge of fluoride and supplements, and CWF Still compiling data....	Brochures will be available for dissemination by Aug 2011 through FAC	Susan Deming FAC
	4. Update existing CWF fact sheets with current information	2009-2014	10-10 MDCH Fact Sheet updated Packet of Materials collected for distribution at council meetings and to general public	All fact sheets and information on CWF used by MDCH is updated on an annual basis.	Susan Deming
	5. Meetings with Fluoridation Committee at least 4x/yr. for input into fluoridation education and promotion. At least one meeting to be face to face.	2009-2014	10-10: Face to face meeting held June 2010. Sept meeting via teleconference Jan meeting request just sent out.	Meetings scheduled at least 4x annually with one meeting face to face.	Susan Deming FAC
	6. Continued support to communities wishing to continue or add fluoridation by addressing city councils, the public	2009-2014	10-10	Documentation annually of communities addressing fluoridation and retaining, deleting or	Susan Deming Pat Cook FAC

	and supplying current fluoridation facts.			adding fluoridation.	
G. Maintain all above objectives through management and at a comprehensive level that meets or exceeds Healthy People objectives	1. Continue Oral Health Fluoridation Coordinator position with state.	2009-2014	10-10: This position has allowed better communication with DNR-E and further progress toward meeting objectives	Continued progress meeting objectives as evidenced by documentation from DNR-E and increased communities utilizing CWF	Susan Deming Pat Cook FAC
	2. Continued Support from Fluoridation Advisory Committee	Ongoing	10-10 Moved FAC from MDCH into Coalition in Jan 10	Continuation of exceeding HP objectives	
H. Fluoridation Coordinator with DNR-E	1. State of MI to hire this person on a permanent basis to manage the fluoridation objectives above through DNR-E and work with the Oral Health Program	2014	10-10: Still a dream at this point. Funding would need to be available and have coordination with DNRE Will need to research other states that do have this position	Actual position designated with DNR-E	Susan Deming

I. Testing of individual wells for fluoride levels	1. Have testing kits available through out state; in all local public health agencies.	Ongoing	10-10: We now have drinking water test kits at the Oral Health program for the public. A link to getting the kits is on our website Need contact with each health agency to see if kits are needed.	Contacts made and test kits in each health agency	Susan Deming
	2. Public awareness of testing individual wells possibly through newspapers, legislative newsletters or other sources.	2009-2014	10-10 On workplan for FAC activity	Public awareness campaign launched	Susan Deming FAC
	3. Explore funding for distribution of testing kits for low-income households.	Aug 2012	10-10 On FAC workplan	Funding streams explored: private and public donations Kits distributed to 10% of those in need	Susan Deming
J. Study on fluorosis levels in the state	1. Include fluorosis questions on 2010 Count Your Smiles screening to third graders	Completed	10-10 Fluorosis indicated on 2010 CYS survey Data still being compiled	Questions included on 2010 Count Your Smiles screening form	Susan Deming OHP
	2. Develop questions for screening using Dean's classification for fluorosis	Completed	10-10 Questions on fluorosis included in 2010 CYS Review of data still incomplete	Questions included on 2010 Count Your Smiles screening form	Susan Deming OHP

	3. Determine if study needs to be designed for MI using screening data	Dec 2010- Dec 2011	10-10 Waiting on final data compilation	Need of study will be determined by end of 2011.	Susan Deming Adrienne Nickles
	4. Design study for Mi working with epidemiologist	Jan 2012- 2014	10-10: No progress at this time	Study designed and ready to implement by 2012 if indicated	Susan Deming Adrienne Nickles
K. Evaluation	1. Design evaluation of program collaboration by organizing stakeholders, developing evaluation questions and criteria using CDC guidelines	Ongoing	10-10 Presently working on plan	Evaluation worplan for CWF developed	Susan Deming Lynda Horsley
	2. Make changes as appropriate to workplan based on evaluation	Annually		Changes made to workplan as discussed.	Susan Deming FAC