Final Recommendations of the Lead and Copper Rule Working Group To the National Drinking Water Advisory Council

November 18, 2015

Introduction

- EPA identified key issues of the Lead & Copper Rule (LCR) that would benefit from input from stakeholders
- LCR Working Group (LCRWG) was formed under the auspice of National Drinking Water Advisory Council (NDWAC)
- 15 working group members, with representation from:
  - State regulators
  - Local health departments
  - Drinking water utilities (small/large systems; public/private)
  - Public interest groups (community, children's health, national NGOs)
  - NDWAC members

LCRWG Process

- Technical presentations on state of the science:
  - Corrosion control
  - Sample site selection
  - Lead sampling protocol
  - Copper public education
  - Lead service line replacement
- Seven, two-day, in-person meetings; a webinar up-date with the NDWAC; and a dozen small group calls to discuss issues, develop recommendations and prepare report

Background

- LCR is a treatment technique rule
  - Rule is not based on maximum contaminant levels but instead requires PWS to take actions to minimize exposure to public
  - Large systems required to reduce corrosivity of water and water quality parameter (WQP) monitoring (PWS > 50,000 pop.)
- If lead action level (AL) is exceeded, the following actions are triggered:
  - Conduct public education
  - Implement source water monitoring and if needed treatment
  - Install or optimize corrosion control treatment (CCT) (for PWS <50,000)
  - Implement Lead Service Line Replacement (LSLR), if corrosion control does not reduce lead and copper levels below the ALs

Considerations in Preparing the Report

(Section 2.1, pp 6-7)

- There is no safe level of lead. Lead-bearing plumbing materials in contact with drinking water may pose a risk at all times, not just when AL is exceeded.
- Proactive action to remove lead materials from contact with drinking water is needed.
- Source is in the service lines and in homes. Thus, elimination of lead materials is a shared responsibility.
  - PWSs, consumers, property owners and public health community all play important roles.
  - A holistic effort is required with cross-sector stakeholder partnerships, and creative financing are needed to remove the sources of lead

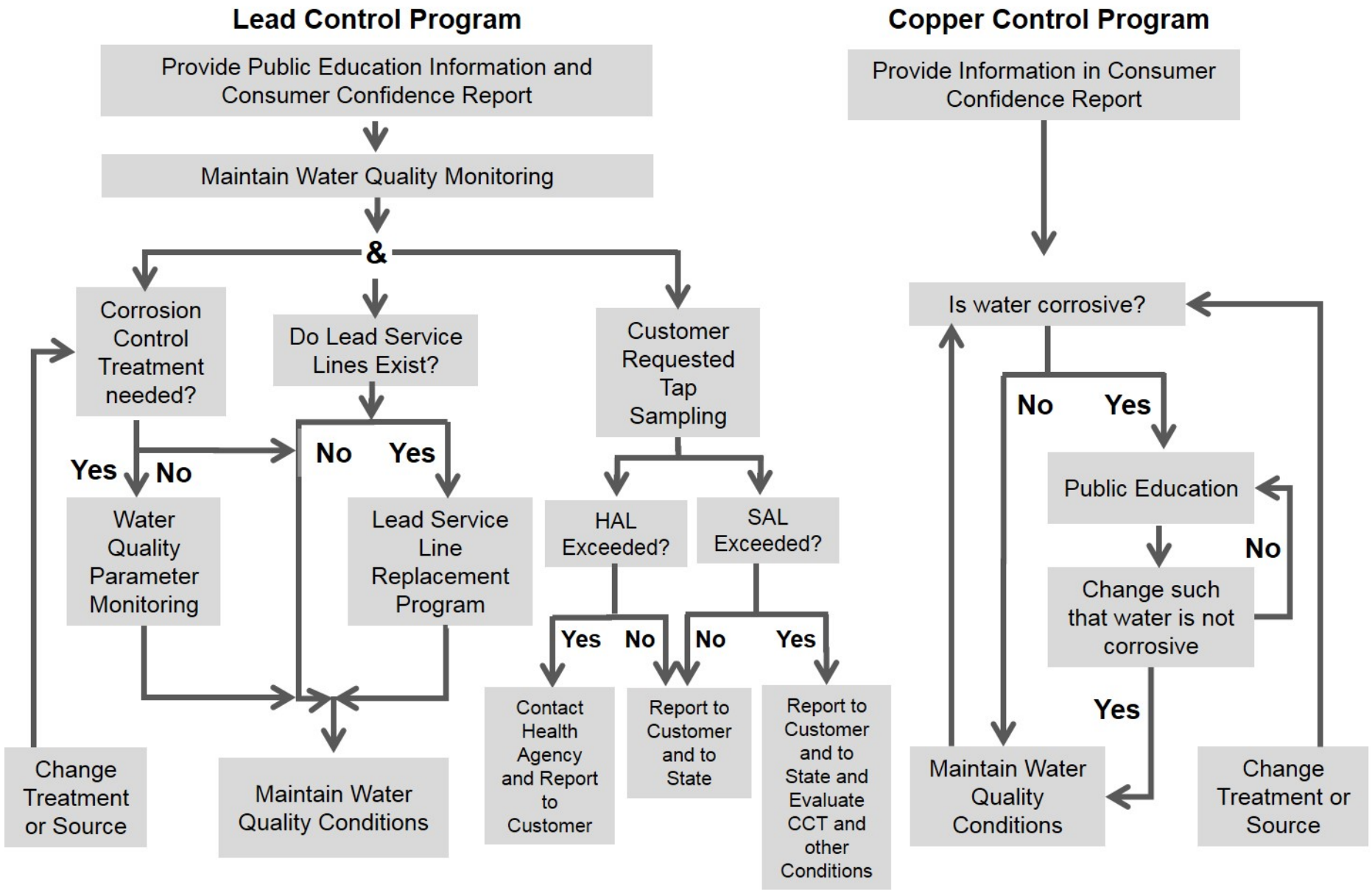
Considerations in Preparing the Report

(Section 2.1, pp 6-7)

- The LCR should remain a treatment technique rule.
- The issues associated with lead and copper are different.
- CCT is complex, dynamic, and varies w/system conditions.
  - Better understanding of the science (and the complexities)
  - Attention to unintended consequences is important.
- Attention to what systems can implement and States are able to oversee and enforce also is important.
- PWS and state resources should be focused on actions that achieve the greatest health protection.

Overview of Recommended Revised Lead and Copper Rule Framework

Note: Compliance steps are embedded throughout the framework



Overview of Recommendations
(Section 3, pp 10-11)

- The LCRWG's proposed improvements to the LCR make some fundamental changes:
  - Proactive approach to actions previously triggered by lead action level exceedance
    - All systems work with customers to remove LSLs
    - Stronger public education requirements for all systems
  - Establish a household action level; results to health dept. if exceeded
  - Separate requirements for copper; focus on systems w/ aggressive water
- Improvements to CCT and monitoring
- Complementary critical actions
- LCRWG conclusion: Taken as a whole, this will achieve more public health protection than the current rule

Complementary Critical Actions

(Section 4, pp 40-42)

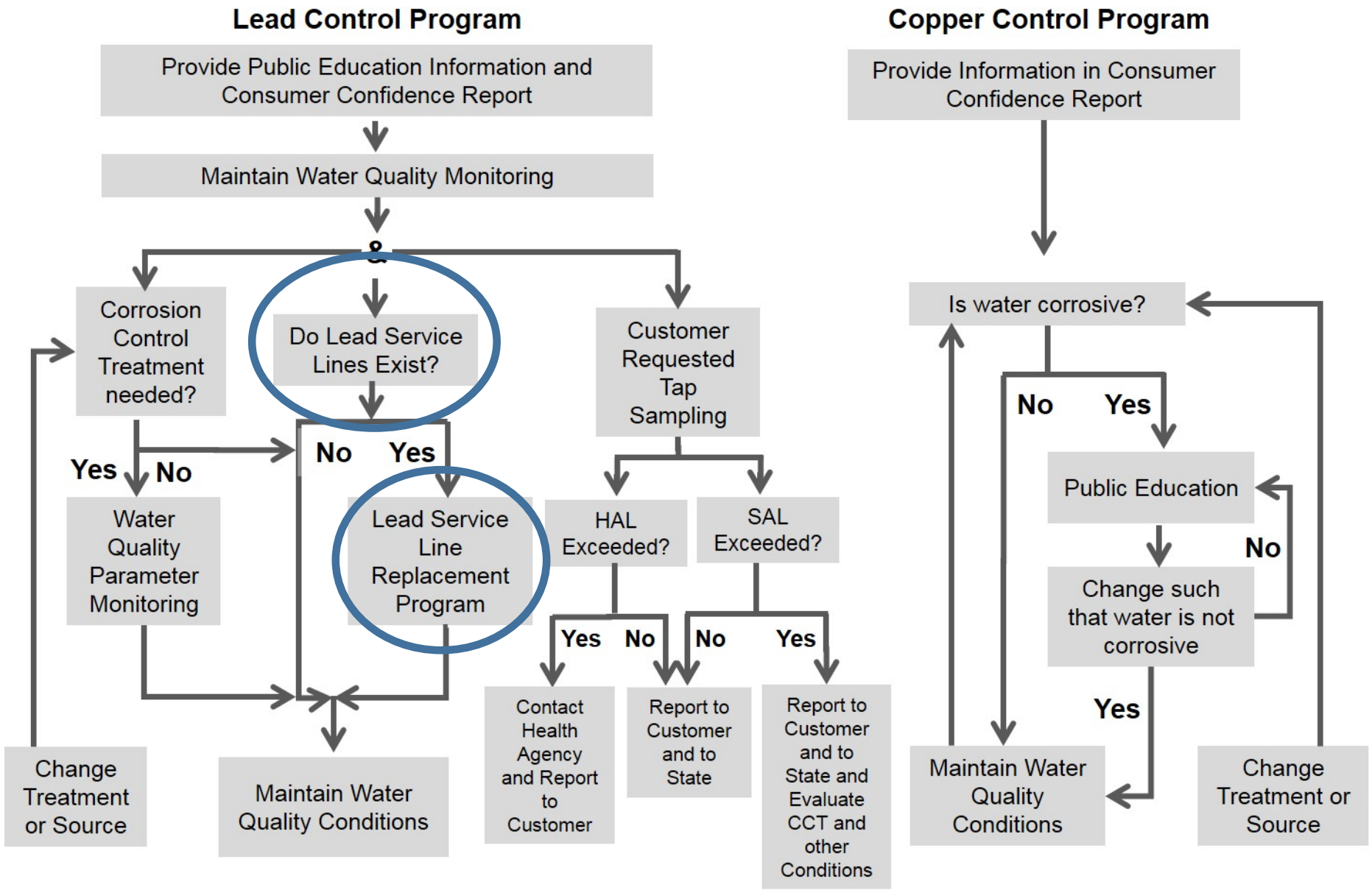
- Revisions to LCR are important but not sufficient.
- EPA can take a leadership role in a national effort with other partners to reduce lead in drinking water that includes, but is not limited to:
  - EPA working across all offices and with other federal agencies on integrated approach to action and education *(HUD, CDC)*
  - State and local policies to support LSLR and to assist customers *(e.g. inspection/disclosure on sale of homes, building code requirements upon substantial renovation, priority in SRF funding)*
  - Enhanced cooperation among state and local health departments on childhood lead poisoning, screening and prevention that includes a focus on drinking water as a source

Complementary Critical Actions

(Section 4, pp 40-42)

- Critical to a national effort to reduce lead in drinking water includes: *[continued]*
  - EPA/CDC and PWS efforts to educate healthcare providers and health departments about health threats due to exposure of lead in drinking water
  - Financial assistance programs for low-income customers
  - Engaging experts in community-based risk communication to improve PE approaches
  - Additional research on CCT, tap flushing, defining water aggressive to copper, etc.
  - National clearinghouse of best practices as a resource both for the public and for small systems (templates)

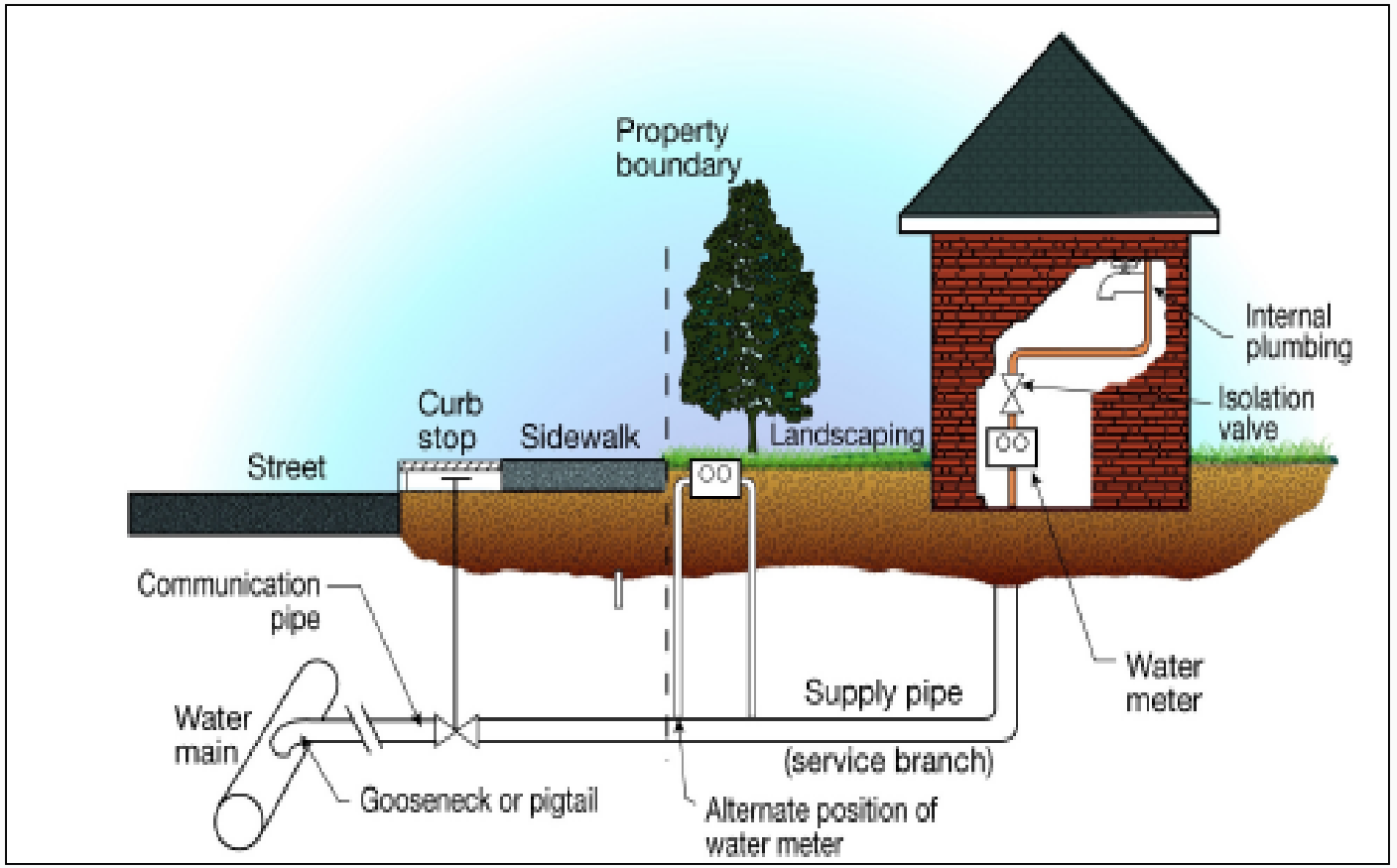
Find and Remove LSLs as Long-term Goal



Lead Service Line Replacement Background
(Section 3.1, pp 13-14)

- Under the current LCR:
  - LSL replacement triggered by a lead action level exceedance
  - Action is required in a short time frame; results in many partial lead service line replacements (PLSLR)
  - The replacement requirement stops with two consecutive rounds of sampling being under the AL

Lead Service Line Replacement Background



Lead Service Line Replacement Background
(Section 3.1, pp 13-14)

- Science Advisory Board evaluation of effectiveness of PLSLRs concluded:
  - PLSLR does not reliably reduce lead in the short-term
  - PLSLR often associated with short-term elevated drinking water lead levels for some period of time
  - Full LSLR appears in general to effectively and reliably achieve long-term reduction of lead levels in drinking water

Proactive Lead Service Line Replacement
(Section 3.1.2, pp 16-18)

- All systems should establish LSLR programs, which set replacement goals, engage customers in implementing those goals, and provide improved access to information
- Recommended framework:
  - Assume lines are lead if prior to a certain date, unless PWS can demonstrate otherwise (incentive for accurate inventory)
  - Targeted outreach to customers with LSLs
  - No penalty for customer refusal; no credit for partial LSLR

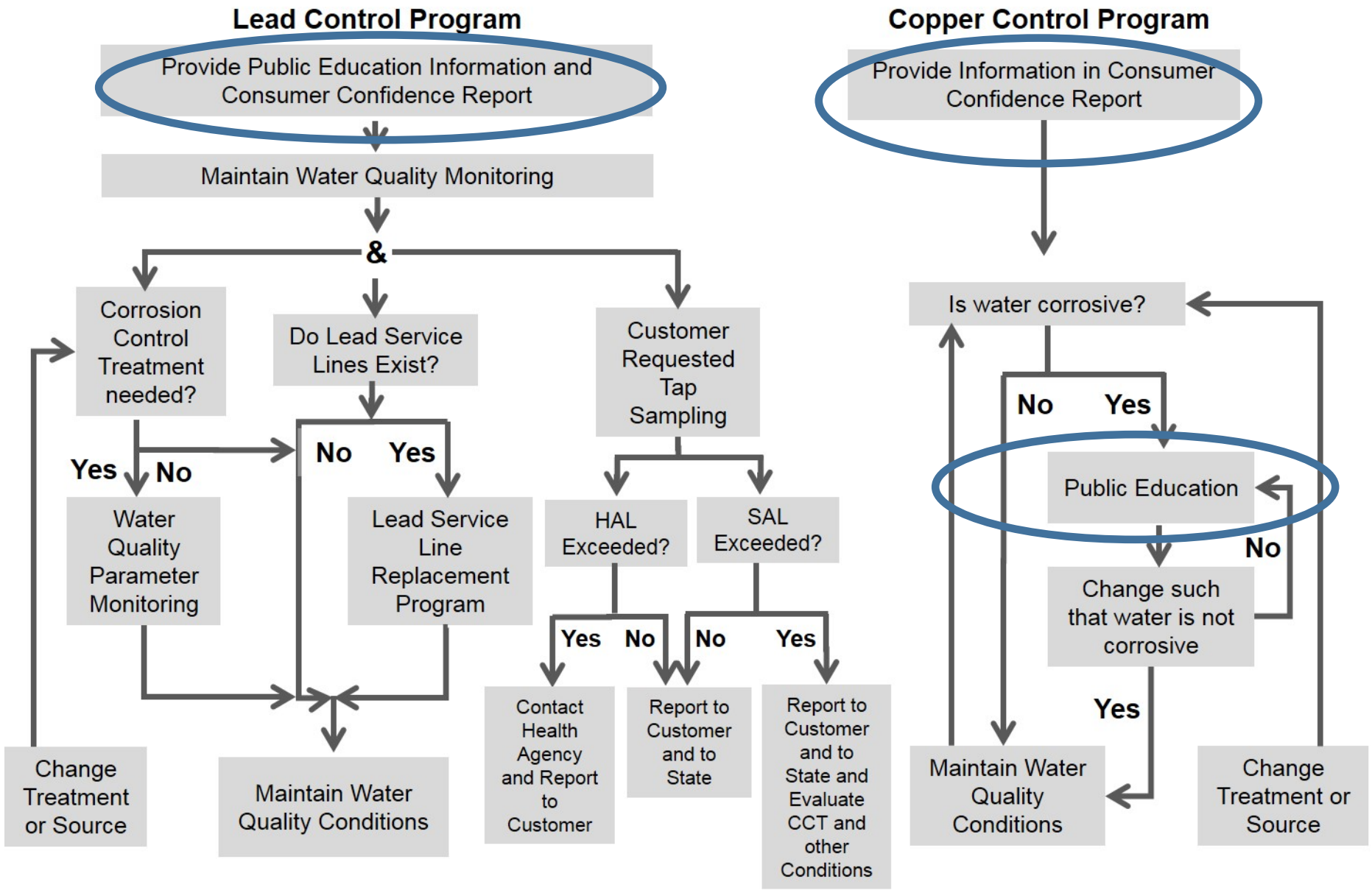
Proactive Lead Service Line Replacement
(Section 3.1.2, pp 16-18)

- Recommended framework continued:
  - Interim replacement milestones (3 year reporting); credit for lines determined not to be lead; increasing actions if milestones are not met (see Appendix Tables 1 and 2)
  - Failure to meet target is not a violation; failure to increase actions is
  - SOPs for planned maintenance, emergency repairs, etc. (EPA guidance/templates for small and medium systems.)

Proactive Lead Service Line Replacement

- Benefits:
  - Primary source of lead in contact with drinking water will be largely removed over time
  - Reduced public health risk and costs of corrosion control treatment
  - Improved process for planning and replacing LSLs (e.g. can include in capital improvement programs)
  - Improved awareness of location of LSLs and PLSLs
  - Improved communication with consumers and public health partners about the risks of lead in drinking water
  - Reduced risk/consequences from treatment upsets or source water changes

Public Education is a Cornerstone



Stronger Public Education Requirements
(Section 3.2, pp 19-21)

- Customers and PWSs share responsibility for reducing exposure to lead; therefore, public education (PE) and customer outreach is critical
- Should convey, among other information:
  - The risk of lead in drinking water and the likelihood that water in one's home contains lead
  - Importance of LSL replacement
  - Shared responsibility nature of the LCR
  - Availability of additional information on measures to minimize exposure through the National Clearinghouse (flushing, POU)

Stronger Public Education Requirements

- LCRWG recommends EPA establish a national lead information clearinghouse (3.2.1, pp 21-23) and include the following LCR revisions:
  - New customer outreach and targeted outreach to consumers with LSLs and vulnerable populations (3.2.2, p 23)
  - Revise the current CCR language to address LSLs and update health statements (3.2.3, pp 23-24)
  - Add requirements for public access to information (e.g. household action level, water quality parameters, LSLR program, etc.) and better access to monitoring info through SDWIS Prime (3.2.4, pp 24-25)
  - Outreach to public health partners (3.2.5, pp 26-28)

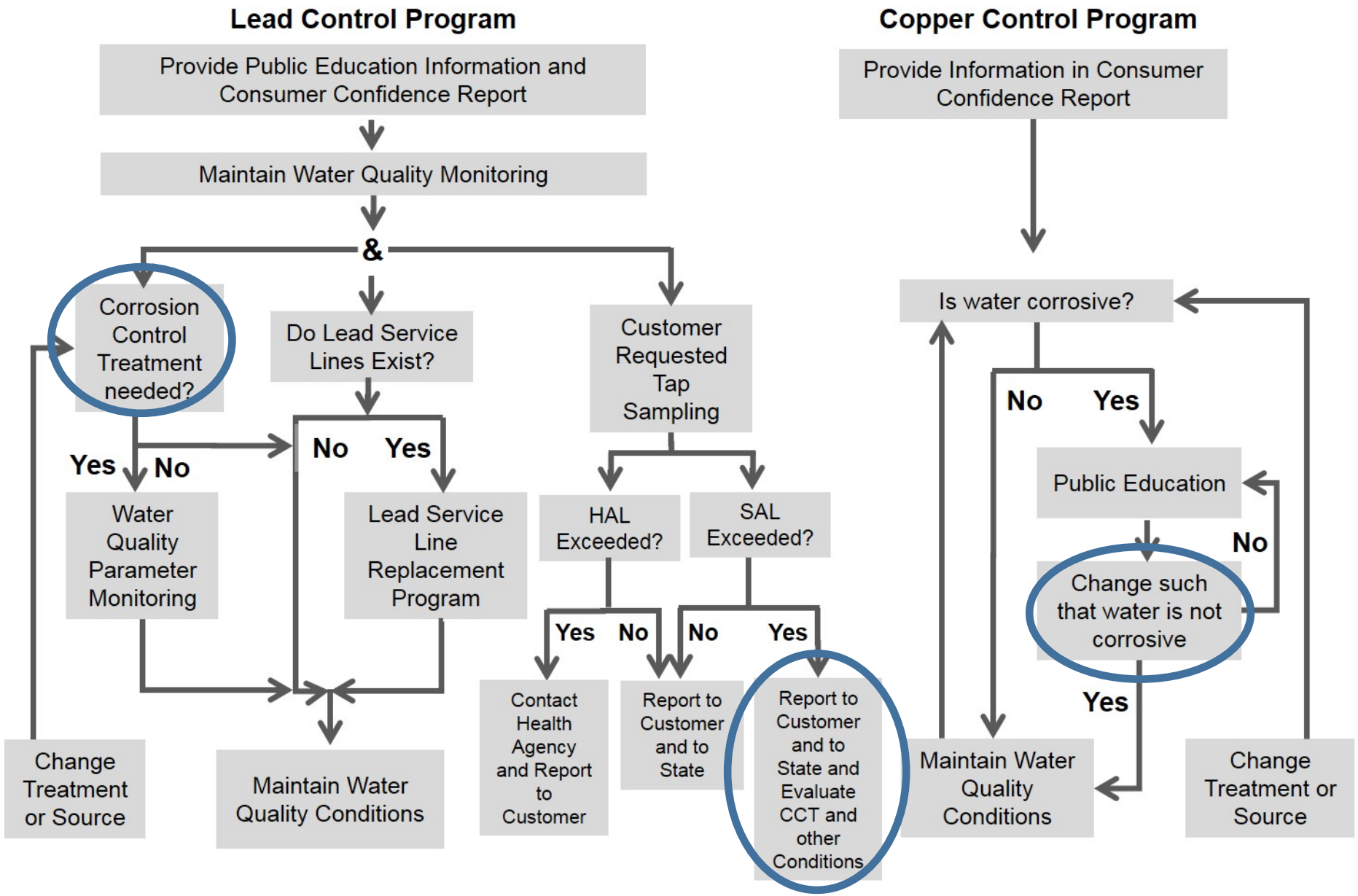
Stronger Public Education Requirements

- National lead information clearinghouse: (Section 3.2.1, pp 21-23)
  - Consult stakeholders and experts in community-based risk communication for best methods
  - Health risks and sources of lead exposure in drinking water (vulnerable populations, no level of lead is safe)
  - How to have your water tested, blood lead level (BLL) tested and limitations to both
  - Specific information for homes with LSLs
  - PE (and other) templates for PWS use (to provide guidance on best practices and reduce burden)
  - And more…

Stronger Public Education Requirements

- CCR revision recommendations: (Section 3.2.3, pp 23-24)
  - Update public health statements to reflect current understandings and science
  - Clarification that CWS compliance with federal regulations is not an indication of individual household lead levels
  - The role of the public to protect themselves from lead exposure
  - Link CCR and national clearinghouse website

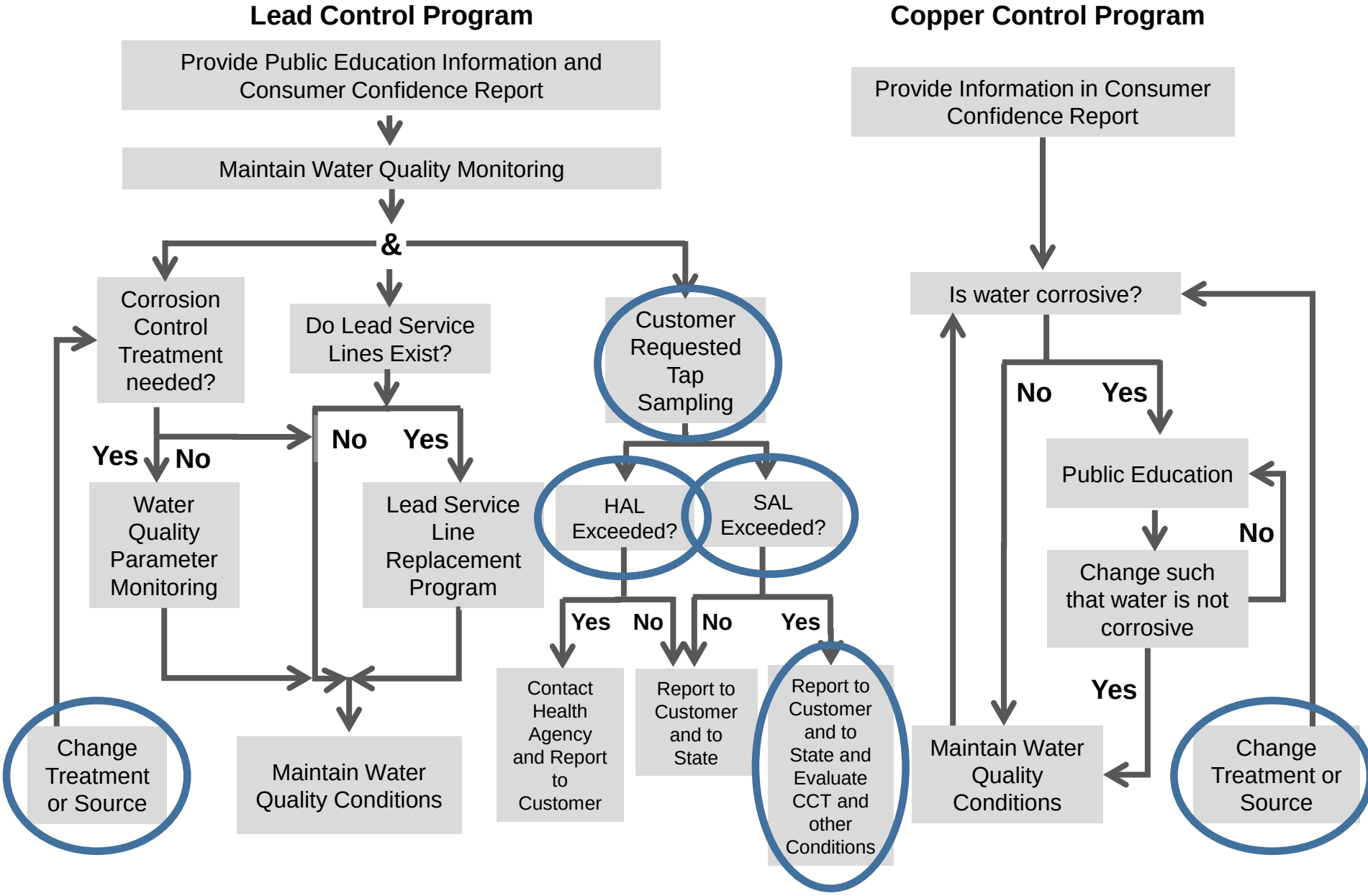
Corrosion Control Treatment is Retained



Improve Corrosion Control Treatment
(Section 3.3.1, pp 29-30)

- LCRWG recommends:
  - EPA release a revised CCT guidance manual and update regularly to reflect new science
  - EPA provide increased assistance to PWSs and primacy agencies
  - PWS review of updates to guidance to determine if CCT is based on best science
  - CCT reassessment when PWS changes treatment or source
  - Better use of water quality parameters (WQPs) for process control
  - More rigorous data review, control charts, process controls
  - PWSs not practicing CCT demonstrate water quality characteristics remain in place

Sampling: Continuous & Customer Initiated



Modify Tap Sampling Requirements

- Currently PWSs conduct tap sampling for lead, with sample site selection tiers and first draw sampling protocol. If the AL is exceeded, small/med systems triggered to CCT and all systems must do PE and LSLR until results are under the AL for two monitoring periods
- Issues with current approach:
  - Sampling protocol may not capture the highest lead levels (not from LSL, inconsistent sampling from customers, variability among properties, etc.)
  - Recruitment is difficult and labor intensive
  - Sampling is infrequent and in relatively few homes
  - Implications for CCT are complicated

Modify Tap Sampling Requirements

(Section 3.4, pp 30-31)

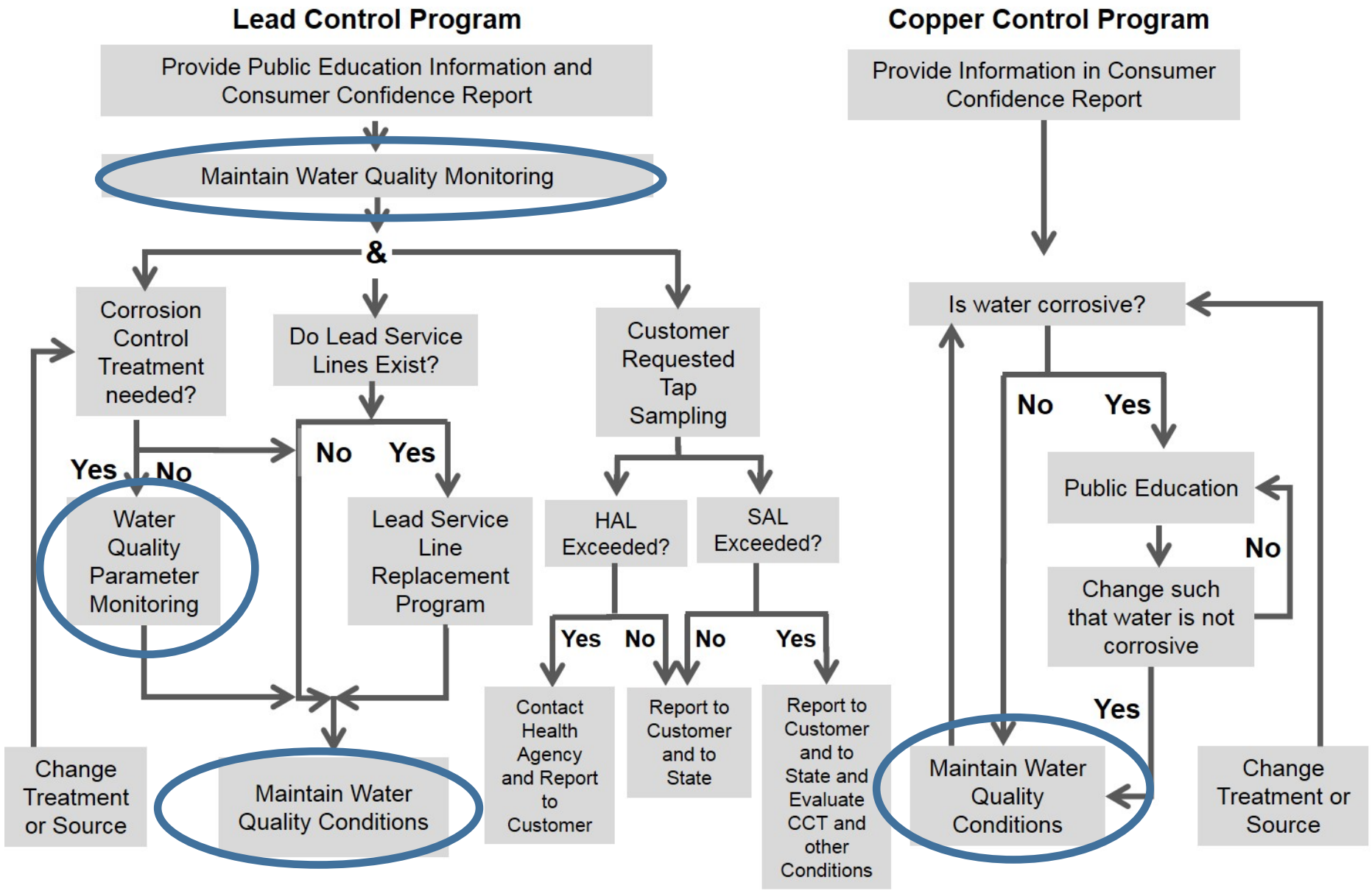
- Voluntary customer initiated tap sampling (with PE encouraging sampling) to provide customers with information and PWS's with data to identify and correct unanticipated problems
  - Targeted outreach to customers with LSLs and vulnerable populations; available to any customer
- Tap sampling results will be used to:
  - Inform and empower individual households to reduce risk
  - Report to health officials when monitoring exceeds a "household action level"
  - Evaluate effectiveness of CCT and guide reassessment

Assessing the Effectiveness of CCT

(Section 3.4.2, pp 33)

- Tap samples would be reported to primacy agency on a routine bases, and include information on sampling protocols used
- The PWS should maintain the data for review to identify trends and changes; data would be available for public review
- Data to be reviewed during sanitary surveys
- Annually, at the request of the primacy agency, the PWS would provide a report which includes the three most current years of data
- If the 90th percentile of the three years of data exceeds the "System Action Level" then the PWS must assess the cause and potentially re-evaluate CCT or take other actions prescribed by the primacy agency
- Source water and treatment changes would necessitate a review of the tap sampling data in consultation with the primacy agency

Water Quality Monitoring is Expanded

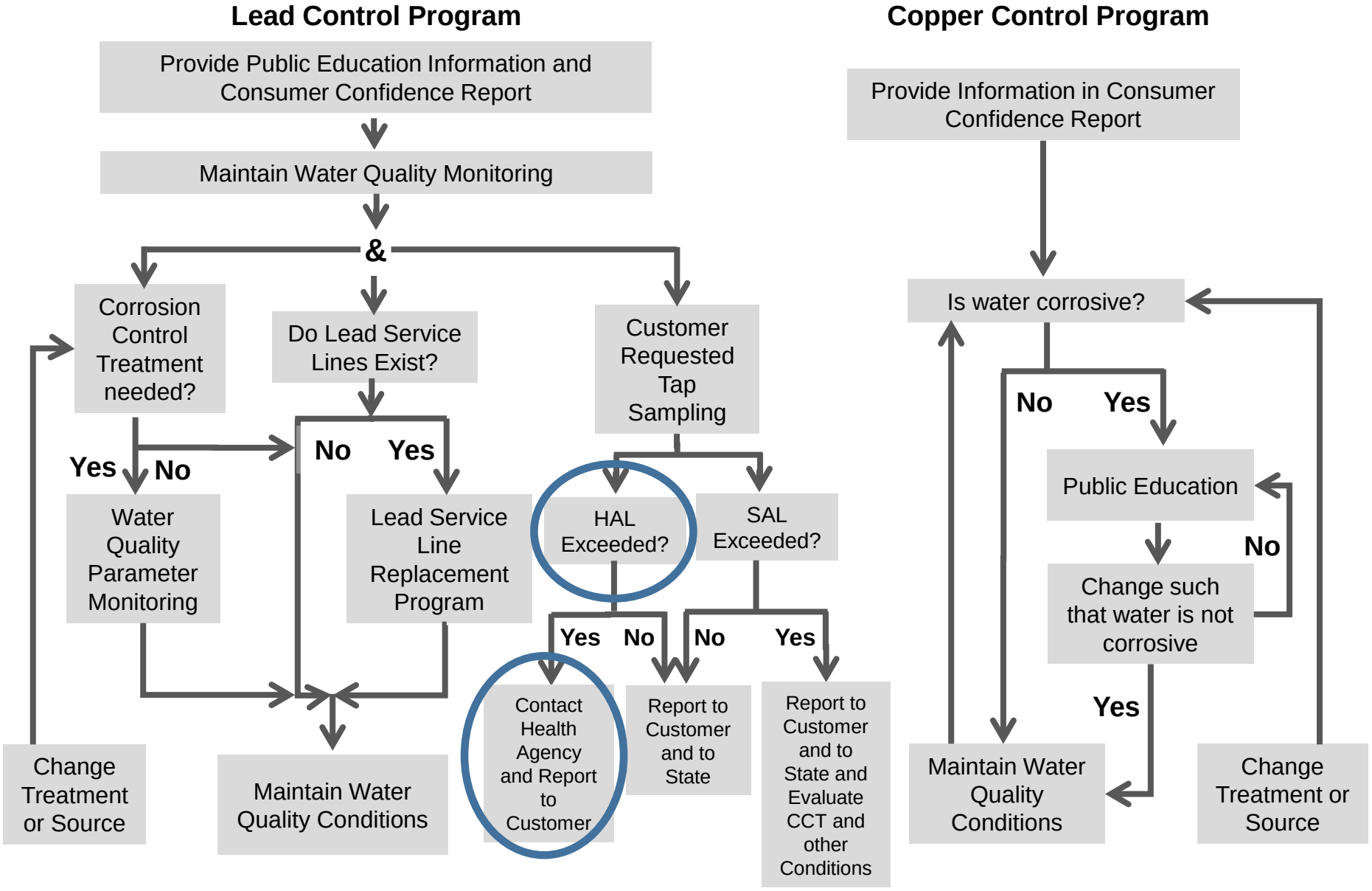


WQP Monitoring Requirements

(Section 3.4.1, p 31)

- Tailor WQPs based on the individual PWS's CCT plan, increase the frequency of WQP monitoring for process control, and ensure sites are representative of the distribution system (DS)
- EPA should review and consider adding to the list of WQPs in the LCR based on new science
  - The new information would be disseminated through EPA's CCT guidance manual
- WQP data should support a more rigorous review process such as control charting and other techniques to fine tune operations, reduce variability in DS and detect excursions

Household Action Level

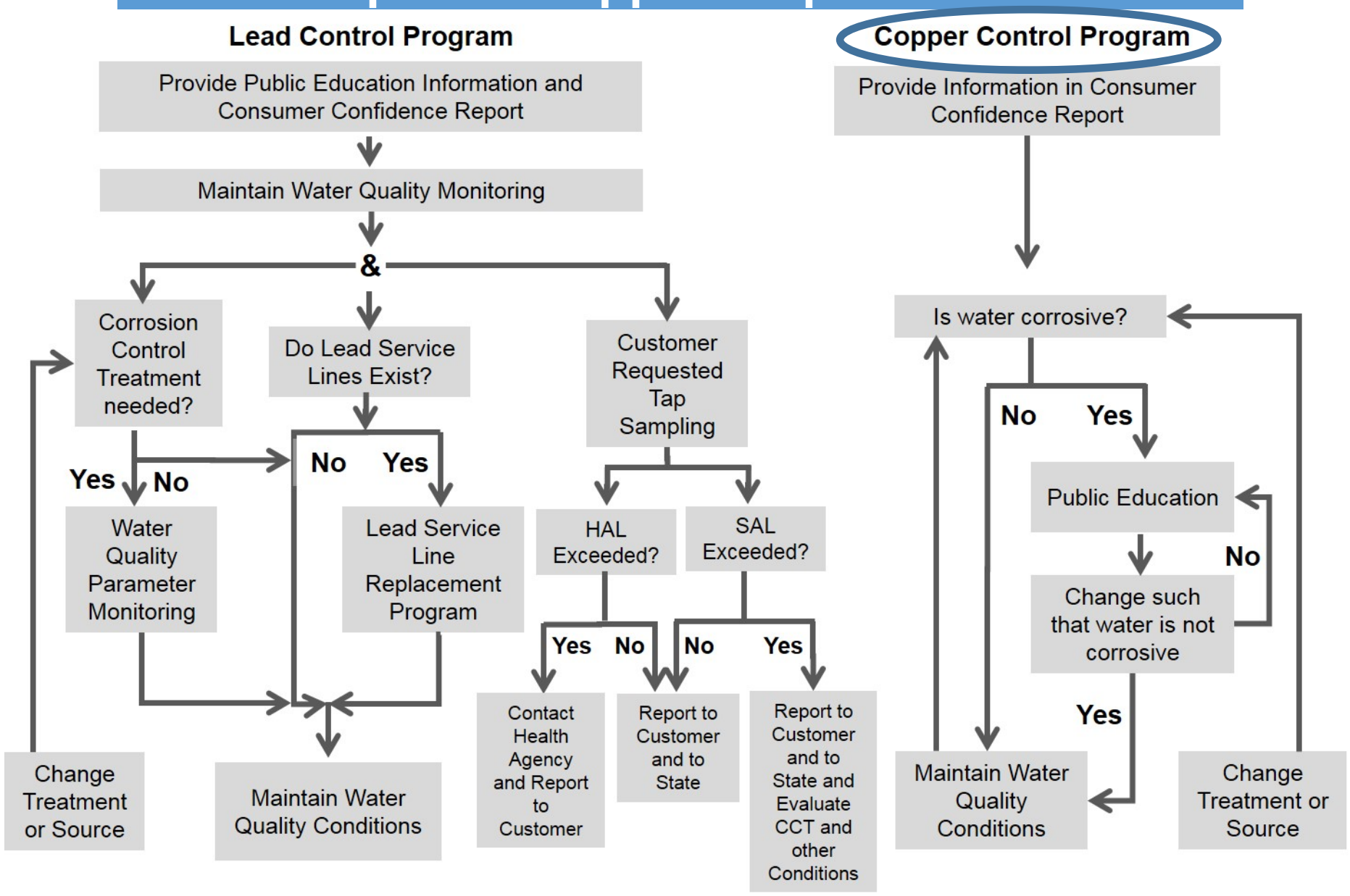


Establish a Household Action Level

(Section 3.5, pp 36-37)

- Current lead action level ("system action level") is based on 90th percentile of collected tap samples
- Household action level would be based on lead concentration necessary to elevate BLL ≥ 5 µg/dL in a healthy, formula fed infant
  - Based on CDC level of concern
- PWS to notify local health department when result of tap sampling is greater than household action level – health department to take action it deems best

Separate Copper Requirements



Separate Requirements for Copper
(Section 3.6.1, pp 38-39)

- Actions should be based on aggressiveness of water to copper not routine in-home monitoring
- EPA should develop criteria to define water that is not aggressive to copper for purposes of the LCR
- PWSs can choose among options to demonstrate water is not aggressive to copper:
  - WQP monitoring
  - One-time evaluation with tap sampling for copper at homes with new copper
  - Pipe loop study
  - CCT to change water chemistry

Separate Requirements for Copper
(Section 3.6.1, pp 38-39)

- For non-aggressive waters, continue to demonstrate that water is not aggressive to copper
- For systems with water aggressive to copper, initiate and maintain a PE program to inform:
  - Owners of new homes at initiation of service; and
  - Owners of renovated homes or to all customers routinely
- EPA should consider whether and under what circumstances CCT should be required (LCRWG assumes this would be a limited set of circumstances, but option should exist)
- Long-term treatment or source water changes may result in a demonstration of continued non-aggressiveness of water