

# Interventions for Clean Water Protection in the Lake Champlain Basin

*derived from*

**Crowdsourcing Solutions to Climate Change Website**  
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## Water Management Interventions

1. Manage **barriers to water flow** (causeways) in Lake Champlain to mitigate sediment and nutrient accumulation
2. Manage **floodplains** to give rivers room to move
3. **Require green stormwater infrastructure** such as raingardens, bioretention and infiltration techniques to reduce and treat stormwater runoff
4. **Retrofit existing commercial and industrial sites** with green stormwater infrastructure
5. **Size culverts** with up-to-date precipitation data to prevent washouts
6. **Stop armoring and channelizing rivers and shorelines**; restore previously armored areas where possible
7. Incentivize **rain barrels and cisterns** to collect, store, and re-use runoff
8. Create a **banking system for flood prevention** funding
9. Develop a **water quality mitigation bank** allowing for trading among municipalities within a watershed to site best management practices at most beneficial locations
10. Develop statewide program to **subsidize water storage capacity increases on farmland** for flood mitigation
11. Give **property tax incentives** for enhanced stormwater management
12. Expand stormwater management **regulations for municipalities and private landowners**
13. Incentivize water management and **water recycling at ski areas**
14. Develop a hotline **complaint system for construction runoff** via state agency
15. Require **State highway facilities to use on-site runoff storage practices**, setting an example for municipalities and commercial sites
16. Improve existing stormwater management practices for **large and small construction projects**
17. Invest in **inspection and enforcement** of water quality regulations on **large and medium farms**
18. Require runoff reduction practices for **small farms**
19. Incentivize practices to **increase soil organic matter** on farms to improve water storage and soil fertility
20. Expand **water quality monitoring in streams and lake**
21. Manage rivers to avoid flood impacts by identifying **flood generation and attenuation zones** across landscape

## Nutrient Management Interventions

22. Encourage/allow **separation of grey water from sewage** and reuse of grey water in appropriate settings
23. Improve function of and harvest/remove phosphorus from **on-site septic systems**
24. Increase **funding for improvements at wastewater treatment plants**
25. Upgrade **waste water treatment facilities to be flood proof**
26. Incentivize use of **emerging eco-technologies for phosphorus capture and reuse** from wastewater and stormwater
27. Regulate **pet waste** clean up
28. Remove **toxics and pollutants** from solid waste and wastewater streams
29. **Require composting and increase recycling** to reduce nutrient imports from outside watershed, and to reduce landfill wastestream and greenhouse gas emissions
30. Develop market mechanisms and methods to **reclaim phosphorus** from farms, runoff, wastewater and solid wastes
31. Expand research on and use of **low-fertilizer cropping strategies**
32. Require **nutrient balancing on farms** in nutrient management planning
33. Invest in establishment of **infrastructure to harvest energy from cow power and compost mounds** to increase farm income, reduce pollution and enhance energy security
34. Manage **manure spreading** practices
35. **Tax imports of high-phosphorus fertilizers and animal feed**
36. **Stop importing feed and fertilizers from outside of the basin**

## Land and Infrastructure Management Interventions

37. Target and employ **erosion control measures on at-risk streambanks**
38. Require **vegetated buffers** in riparian zones and along lakeshores
39. Require **smart growth principles and low-impact development practices** in planning and design of development and transportation
40. Invest in **better backroads** construction and maintenance
41. Minimize use of **road salt** and do post-storm clean up and reuse of excess salt applied
42. Improve **road construction and maintenance** practices
43. **Inventory transportation network** and identify infrastructure in need of upgrade
44. Change **zoning and land use policy mechanisms** to require smart growth and prevent land parcelization to encourage ecosystem service provision
45. Require development and zoning decisions to account for **downstream impacts**
46. Limit **development in river corridors**, including phasing out obsolete buildings in flood prone areas with policy and incentives
47. Incentivize **pasture-based dairy**, integrating feed and livestock production to improve fertilizer and manure loading and management
48. **Amend exemptions for agriculture and forestry in law and tax policies** including Current Use
49. Require all Vermont agriculture to be **organic**
50. Require **livestock exclusion from streams**
51. Require **cover cropping** to reduce soil and nutrient loss from agriculture
52. Enact a moratorium on **wetland impacts** and enhance functions of existing wetlands
53. Increase funding and participation in **conservation easements** to focus on sites with climate change adaptation and mitigation benefits and ensure compliance
54. Manage land use to protect and enhance terrestrial and aquatic **wildlife habitat**, including salmonid habitat
55. Require **sustainable forestry** practices and regulations

## Other Interventions

56. Invest in **bioremediation, phytoremediation, brownfields clean-up** to reduce pollution and improve quality of existing developed areas
57. Establish **edible forest gardens** as a way to provide food, while increasing forest cover and wildlife habitat
58. Use **climate-resilient tree species for forestry and revegetation projects** to enhance and maintain forest functions
59. Invest in the research on refining **sustainable forestry** practices
60. Increase education about opportunities for **mutual economic and ecological benefits** and stewardship focused on Lake Champlain
61. Invest in research, education and outreach for **farm resilience** in a changing climate
62. Employ market mechanisms to **price and value farm products** to reflect ecological impacts
63. Provide more **financial and technical assistance and outreach** to promote soil health and associated best practices on farms
64. Develop best management practices for **soil health on vegetable and berry farms**
65. Increase research on **costs of agricultural best management practices** (BMPs)
66. Expand **monitoring and evaluation** of effectiveness of water quality BMPs
67. Research relationship between **land use, water quality, mitigation efforts, and climate change**
68. Use **Genuine Progress Indicator** (GPI) instead of traditional economic metrics to assess progress of water quality and climate change solutions