V. HAZARDS AND EXISTING MITIGATION MEASURES

This section provides more detail on how certain natural hazards affect specific parts of Concord. Existing mitigation measures are discussed under each hazard heading and existing mitigation measures for all natural hazards are compiled in Table 14.

Flood-Related Hazards

Overview of Town-Wide Flooding

Three major rivers converge in Concord – the Assabet, the Sudbury, and the Concord River. As a result, the town is home to a significant amount of flood plain. In addition to the three major rivers, Concord's waterways also consist of tributary streams, low-lying wetland areas, and ponds formed naturally and from man-made dams. Concord's drainage infrastructure consists of 124 culverts, 183 drainage outfalls, 2,522 catch basins, 751 manholes, and 50 miles of drain lines.

Flooding occurs in Concord on a routine basis, ranging from minor nuisance roadway flooding, to basement flooding, to roadway closures, and to bridge scouring. The causes can be due to proximity to floodplain, improperly functioning drainage systems, beaver activity, and dam breaches. More detail on specific flooding regions within the town is provided in the site-specific flooding section below.

In the event of a large storm event, the greatest concerns are property damage, blockages of roadways or bridges vital for emergency response, and breaching of dams. Not only is Concord home to many regional entities of significance (see section on Regional Issues), but it also has historic sites that are irreplaceable and must be protected.

Concord employs a number of practices to help minimize potential flooding and impacts from flooding, and to maintain existing drainage infrastructure. Existing town-wide mitigation measures include:

Existing Town-Wide Mitigation for Flood-Related Hazards

a) Participation in the National Flood Insurance Program (NFIP). FEMA maintains a database on flood insurance policies and claims. This database can be found on the FEMA website at www.fema.gov/business/nfip/statistics/pcstat.shtm

b) Engineering staff developed a Drainage System Inventory and integrated the data into the Town's Geographical Information System (GIS).

c) Catch basins on public roads and property are cleaned annually. Street sweeping also occurs on an annual basis, and more often in the village center areas.

d) The Public Works Department provides maintenance to culverts, drainage pipes, and other drainage infrastructure on an as-needed basis. Drainage maintenance activities are coordinated with the Division of Natural Resources and are performed under the general maintenance permit issued by the Natural Resources Commission.

e) The town has established a multi-year program to fund and improve drainage and has a 20 Year Stormwater/Drainage Management Plan to address a backlog of deferred repairs and the need for replacement of approximately 17 large culverts. Recent drainage improvement projects have been completed or are near completion at Valley Road, Hayward Mill Road, Williams Road, Fairhaven Road, Spring Road, Lowell Road, Walden Pond, Commerford Road, Main Street, Keyes Road, Cottage Lane, Warner's Pond Dam, and the Mill Dam culvert. Reconstruction of Heath's Bridge at the Sudbury River is underway, and MassHighway is in the process of designs to repair Flint's Bridge and the Pine Street Bridge.

f) The Town mitigates for beavers on a case-by-case basis. The town will use a trapper as necessary if there is an immediate threat and is a public health issue. A permit to do so is required by state law through the local Board of Health. In some instances pond levels will be lowered in anticipation of potential flooding. In other instances, water flow devices will be installed by Public Works, such as at Hutchins Pond in 2004. The town uses an interdepartmental approach to deal with beavers.

g) Concord's Zoning has a Flood Plain Conservancy District (Section 7.2) that restricts certain activities and requires a special permit for activities located within a flood zone.

h) Concord's Zoning has a Wetlands Conservancy District, intended to protect wetland resource areas and minimize flooding (Section 7.3).

i) The Massachusetts Stormwater Policy is applied to developments within the jurisdiction of the Natural Resources Commission.

j) The Town's subdivision regulations have general language about avoiding impacts to flood plains and minimizing drainage issues. Peak flows and runoff from the property can not be greater than pre-development rates. Drainage requirements for Site Plans are also general and require post-development rates to meet pre-development runoff rates.

k) Open Space Residential Developments are allowed under Concord's Zoning.

l) The Town's Zoning also has a Groundwater Conservancy District to protect its drinking water supplies.

m) Concord has substantial protected open space and proactive land acquisition and preservation programs, including:

- The town's Open Space Plan, Long-Range Plan, and Community Preservation Plan are comprehensive and identify key parcels for purchase or protection.

- The town adopted the Community Preservation Act with a 1.5% surcharge in 2004.
- Low-lying wetland areas provide significant flood storage for the town's rivers.
- Flood plain has been preserved and is effective at minimizing flooding.
- The Natural Resources Commission, Concord Land Conservation Trust, and Concord Land Foundation help oversee conservation areas in the town.
- The Community Preservation Committee helps administer the Community Preservation Act, and developed a Community Preservation Plan in 2008.

n) The town continues to implement its NPDES Phase II stormwater program which includes public education programs.

Site-Specific Flooding

The following areas were identified by Town staff as areas that have experienced more significant flooding in the past. The numbers in parentheses refer to the Areas of Concern on Map 8 in Appendix A.

Westvale Meadows Condominiums (1)

The Westvale Condos are located downstream of several dams along the Assabet River and have experienced flooding of the property, but not of the buildings. If the dams were to breach, the buildings would likely be impacted.

Pine Street Bridge (2)

The Pine Street Bridge over the Assabet River has been closed in the past due to flooding (approximately once every 5 years). If any upstream dams were to give way, the impacts to this bridge would be of concern. Tree stumps in the river wear on the bridge and the banks are eroded. This bridge also is a concern due to its weight restrictions and inability to carry loads from Emergency Response Vehicles (see further discussion under "Other Hazards").

Existing Mitigation

This bridge is scheduled for upgrades by the state, mainly for structural integrity and not necessarily to improve water flow.

Commonwealth Avenue at Warners Pond (3)

This site at Commonwealth Avenue up to Maple Court has experienced flooding caused by Warner's Pond.

Existing Mitigation

Warner's Pond dam is currently being reconstructed and therefore flooding at this site will be greatly reduced due to better control of the dam.

Pedestrian Bridge at Warner's Pond (4)

This pedestrian bridge behind the Warner's Pond dam connecting Winthrop to Commonwealth Avenue is old and of concern due to scouring. This issue should improve upon completion of the Warner's Pond Dam upgrades.

Existing Mitigation

Warner's Pond dam is currently being reconstructed and therefore flooding at this site will be greatly reduced due to better control of the dam.

Spencer Brook Bridge (5)

The bridge over Spencer Brook has experienced flooding due to upstream beaver dams.

Sudbury Road – Heath's Bridge (6)

Heath's Bridge over the Sudbury River has caused water backing up to houses, but so far it has not impacted the structures. The town has had to redirect traffic in the Sudbury and Oxbow Drive areas. This site does have potential for property damage, but this has not yet occurred. The flooding occurs during the wet season or during a major storm such as a hurricane.

Existing Mitigation

This bridge is currently being reconstructed by the state.

Fitchburg Turnpike (7)

The Fitchburg Turnpike area in southern concord has experienced road closures 3 to 4 times per year for the past several years. This area is located within floodplain.

Route 2 Bridge over Sudbury River (8)

The Route 2 bridge over the Sudbury River has not experienced impacts from flooding, however, the town has noted this as an area of concern due to its important status as a main arterial route.

Concord Center (9)

The Concord Center Area is located within the floodplain where the Assabet, Sudbury and Concord Rivers converge, as well as the culverted Mill Brook enters the Concord River. Mill Brook runs under the buildings, many of which are historic. This area floods around once every 10 years. Basements have been impacted, access has been restricted, roads have closed, and floor drains have backed up. A collapse of the culverted brook could greatly impact buildings, which is of great concern to the town.

Existing Mitigation

The Mill Dam culvert under Main Street is currently being rehabilitated by the Department of Public Works.

Cambridge Turnpike (10)

The Cambridge Turnpike experiences flooding every year over approximately a 2-mile stretch. It had two road closures in 2006 due to rising water levels. The water damages the road bed and the town has spent money to keep repairing the bed, which is constructed on peat moss. Beaver dams in the area also worsen the flooding.

Existing Mitigation

The town has used beaver deceivers to mitigate for beaver activity in the area. Improvements to the Crosby Dam will also help alleviate some of the flooding (see Crosby Pond discussion below), however, a complete solution would require significant culvert upgrades and raising of the road bed.

Hawthorne Lane (11)

Hawthorne Lane is located in floodplain and seasonally floods, causing road closures and impacts to basements. One potential solution may be for residents to flood proof their homes.

Police/Fire Station (12)

Mill Brook behind the Fire and Police Stations has caused some flooding on the property but not at the buildings.

Harrington Avenue (13)

Harrington Avenue, near Kennedy's dam, has been identified by the town as a historical flooding site.

Laws Brook Road (14)

This site has been identified by the town as a historical flooding area.

Lowell Road Sewer Pump Station (15)

This wastewater pump station is located within floodplain and may be susceptible to infiltrating flows during large storm events, thus requiring a greater pump capacity to maintain wastewater services to important sections of the town.

Williams Road Site (16)

This site has been identified by the town as a historical flooding area.

Barretts Mill Road (17)

This site has been identified by the town as a historical flooding area.

Barretts Mill Road east of Strawberry Hill Road (18)

This site, near Barrett's Mill Road Dam, has been identified by the town as a historical flooding area.

Old Road to Nine Acres Corner (19)

This site has been identified by the town as a historical flooding area.

Heaths Bridge Road (20)

This site has been identified by the town as a historical flooding area.

Nashawtuc Road – Nashawtuc Bridge (21)

This town-owned bridge is an area of concern due to the failure of its sidewalls and the large debris dams that form during a flood.

Existing Mitigation

Jersey barriers have been temporarily installed to maintain the integrity of the side walls. Professional engineering services were solicited by the town and a report was provided to investigate the movement along the parapet walls and to provide recommendations for any proposed repairs.

Liberty Street (22)

This site has been identified by the town as a historical flooding area.

Peters Spring Road (23)

This site has been identified by the town as a historical flooding area.

Crosby Pond (24)

Crosby Pond and dam, located adjacent the Cambridge Turnpike, have flooded and exacerbated the flooding at Cambridge Turnpike. In addition, beaver activity has worsened the situation. The dam is in poor condition due to infiltration through the earthen dam, and trees growing in the embankment.

Existing Mitigation

The town has lowered pond levels in the past in anticipation of flooding, however, the owner is currently in the process of upgrading the dam per court order.

Virginia Road (25)

This site has been identified by the town as a historical flooding area.

Monument Street – Flint's Bridge (26)

This bridge is a concern due to its weight restrictions and inability to carry loads from Emergency Response Vehicles (see further discussion under "Other Hazards").

Existing Mitigation

This bridge is scheduled for upgrades by the state.

Main Street Bridge between Elm and Wood (27)

This bridge is a concern due to its weight restrictions and inability to carry loads from Emergency Response Vehicles (see further discussion under "Other Hazards").

Dams

According to data provided by the Massachusetts Department of Conservation and Recreation and town staff, the following dams are located in Concord. The numbers following the dam names correspond to the Critical Infrastructure ID provided on maps 1-8 in Appendix A.

Warners Pond Dam (90)

Warners Pond Dam, located in West Concord tributary to the Assabet River, is town-owned and has caused flooding of downstream properties in the past. Upstream issues in neighboring towns have lead to siltation and filling of the pond.

Existing Mitigation

This dam is currently in the process of being repaired following local studies that determined the dam was in poor condition. Work includes spillway reconstruction, sluiceway reconstruction, slope stabilization, channel improvements, water level control improvements and permanent access improvements.

Kennedy Pond Dam (91)

This dam is privately-owned and is on Kennedy Pond, tributary to the Assabet River.

Damondale Dam (92)

This dam is located on the Assabet River and is privately owned.

Harrington Ave Dam (Town-owned) (93)

This is a town-owned dam near where Kennedy Pond joins the Assabet River.

Lower Musquetaquid Pond Dam (94)

This is a private dam located at the Sportsman Club on Musquetaquid Pond.

Upper Musquetaquid Pond Dam (95)

This is a private dam located at the Sportsman Club on Musquetaquid Pond.

Batemans Pond Dam (96)

This is a privately-owned dam located on Bateman's Pond at Dakin Brook.

Barretts Mill Road Dam (97)
This dam is privately-owned and located on Angiers Pond along Spencer Brook.

Dakin Brook Dam (98)
This is a town-owned dam located on Dakin Brook near Lowell Road, tributary to the Assabet River.

Crosby Pond Dam (99)

Crosby Pond and dam, located adjacent the Cambridge Turnpike, have flooded and exacerbated the flooding at Cambridge Turnpike. In addition, beaver activity has worsened the situation. The lengthy dam is privately-owned and is in poor condition due to infiltration through the earthen dam, and trees growing in the embankment.

Existing Mitigation
The town has lowered pond levels in the past in anticipation of flooding, however, the owner is currently in the process of upgrading the dam per court order.

Existing Town-Wide Mitigation for Dam Hazards

a) *DCR dam safety regulations* – All dams are subject to the Division of Conservation and Recreation's dam safety regulations. The dams must be inspected regularly and reports filed with the DCR Office of Dam Safety.

b) *Permits required for construction* – State law requires a permit for the construction of any dam.

Wind-Related Hazards

As shown on Map 5 in Appendix A, one tropical storm has tracked through Concord. The hazard mapping also indicates that the 100 year wind speed is 110 miles per hour. No tornados have been recorded within the town.

Tree damage during high winds has the potential to be a significant hazard in Concord. Trees can knock out power lines and block major roadways, which hinders emergency response.

Concord does experience downed trees that have caused isolated power outages and roadway blockages, but Concord also prides itself on its tree-lined streets. Therefore, maintaining trees in a proactive fashion has been a trade-off for the tree amenities. Both the Department of Public Works and the Concord Municipal Light Department have effective tree trimming and removal programs. In addition, the town is moving towards burying utility wires underground.

Concord has numerous outdoor summer programs and microbursts have been a problem. Microbursts have also affected wires in the Monument Street area.

There are a large number of historic structures in town vulnerable to high winds because they are not structurally sound. The town does have an inventory of historic structures available.

The town of Concord makes every effort to mitigate against damage due to high winds. Some of the specific actions are provided below.

Existing Town-Wide Mitigation for Wind-Related Hazards

a) The Public Works Department has an effective tree trimming in public areas and along Rights-of-Ways. They have a multi-year plan trimming program (approximately a 3 year cycle) to go over their whole system.

b) The Concord Municipal Light Department also effectively maintains trees around the wires and substations and will occasionally take down a tree on private property. They have a multi-year plan trimming program (approximately a 3 year cycle) to go over their whole system.

c) New developments must install buried utilities.

d) The town currently has 40% of its wires installed underground , and is slowly retroactively burying wires where street work is underway for other purposes.

Winter-Related Hazards

Map 6 in Appendix A indicates that the average annual average snowfall in Concord is between 48.1 inches to 72 inches. The town provides standard snow plowing operations, and clearing snow has not posed any significant challenges. The town does make plowing of roads a priority near emergency routes, such as those to Emerson hospital.

There have been problems with heavy snow collapsing roofs on stables, garages, barns, and sheds. The roof of the Annursnac Hill Reservoir building owned by the town may be vulnerable to collapsing in heavy snow or a if a tree comes down.
Other winter issues include ice storms that can affect utilities and cause isolated power outages.

The town of Concord currently employs a number of measures to mitigate for winter storm events. These are described below.

Existing Town-Wide Mitigation for Winter-Related Hazards

a) The Public Works Department provides standard snow plowing operations, including salting and sanding, but with a restricted salt policy. They also are in the process of using a brine solution.

b) Overnight parking bans are in effect from November 1 – April 1.

c) Public Education - Winter Maintenance information is available on the town website

d) The town has a Snow and Ice Disposal bylaw that states no person shall put any snow or ice in any public place or upon any part of a public street or sidewalk.

e) The Town provides public education to residents regarding roof collapses due to snow when conditions are dangerous. The town works with the Chamber of Commerce to get the word out, such as via email. In addition, new codes are more stringent to better guard against roof collapses.

f) The town has sufficient snow storage – one site is at the former landfill and the other is at the prison.

Fire-Related Hazards

The state is divided into 6 drought regions (see state plan). Concord is located in the Northeast Drought Region. The state has rated communities according to fire risk based on past occurrences, and Concord is rated as a low risk.

The Concord Fire Department responds to a handful of brush fires annually, but they do not result in major property damage or deaths. The most common cause of these fires is due to human carelessness. The brush fires are typically not concentrated in certain locations, but are distributed throughout the town.

Vegetation management near residences can be an issue. If forested or vegetated areas encroach upon homes, the risk of brush fires impacting those homes is increased. A cleared buffer of 50-100 feet of clearance is ideal next to a structure, however it is hard to enforce over time as vegetation grows from year to year.

Concord is home to over 50 farms, and drought is a concern for the animals on those farms.

Existing Town-Wide Mitigation for Fire-Related Hazards

a) Town bylaws allow controlled open burning in accordance with state regulations, but a permit is required from the Fire Chief for each day of intended burning.

b) The Fire department reviews all subdivision and site plans for compliance with site access, water supply needs, and all other applicable regulations.

c) The Fire Department maintains a website with substantial public education on fire prevention at: http://www.concordnet.org/pages/ConcordMA_Fire

d) The Fire Department is trained for protecting the Federal Wildlife Preserve and the National Park.

e) The Concord Fire Department obtained a new brush truck in 2006.

f) The town provides public education and notices during "drought watches."

Geologic Hazards

Earthquakes

Most municipal officials acknowledged that earthquakes were the hazard for which their community was least prepared. There have been no recorded earthquake epicenters within Concord. If an earthquake hits, the entire region, not just the town, would face significant challenges. Earthquakes often trigger fires. The water distribution system may be disrupted, thus posing a risk for public health and fighting the fires.

Although new construction under the most recent building codes generally will be built to seismic standards, much of the development in the town predates the most recent building code. The Fire and Police Stations were built in the 1950s and renovated in the 1990s, but they are likely vulnerable to earthquakes as they were not structurally retrofitted to meet earthquake standards.

Other key buildings and infrastructure likely vulnerable to a high-magnitude earthquake are: Fire Station 2, Emerson Hospital infrastructure and parking garage, Concord Light Facility, Substation, Tenneco Gas Lines, the Prison, and almost all of the town's historic buildings.

Existing Town-Wide Mitigation for Earthquake Hazards

a) The town does have shelters and backup facilities (see multi-hazard mitigation below).

b) The Concord Water Department is proactive in being able to isolate portions of the water system and identify alternative firefighting water supply sources.

c) The town does have an evacuation plan as specified in its Comprehensive Emergency Management Plan (CEMP).

Landslides

Map 4 in Appendix A indicates that the western half of Concord is classified as moderate risk for landslides, while the western half is classified as low risk. There are not many steep slopes in the town and local officials state that landslides are not a major threat or occurrence in Concord. Rather, there are localized issues of erosion during construction, as a result of development, or as a result of clearing vegetation.

Existing Town-Wide Mitigation for Landslide Hazards

a) The subdivision regulations do have maximum slope requirements for new roads.

b) The town has an earth removal bylaw.

Other Hazards – Bridge Weight Restrictions

The town of Concord has many bridges that cross the numerous waterways throughout the town. Many of these bridges are older structures that are not rated for the weights of the emergency vehicles such as fire trucks. As a result, the Fire Department must take alternate routes around these bridges to reach an emergency situation that can be a detour of up to 3 miles. This greatly hinders the emergency response efficiency for a natural hazard or any other emergency.

The three bridges of greatest concern are as follows. Please note the numbers in parentheses refer to the Areas of Concern located on map 8 in Appendix A.

- *Pine Street Bridge (2)* – This bridge adds a two mile detour for emergency vehicles. This bridge is currently being upgraded by the state.
- *Flint's Bridge on Monument Street (26)* – This bridge has a 6 ton rating and a detour of 3 miles. This detour happens approximately 2-3 times per week. This bridge is scheduled for upgrades by the state.
- *Main Street Bridge between Elm & Wood (27)* – This bridge has a 7 ton rating and adds a 2 mile detour. This detour happens several times per week.

Existing Multi-Hazard Mitigation Measures

The Town of Concord has several mitigation measures in place that address more than one hazard. In general the town has a very thorough emergency response process, however, the challenge it faces is sheltering for residents and a number of non-traditional groups. The high school provides shelter, but it does not have a generator. The town also must coordinate options for shelters for the elderly, Emerson hospital, the prisons, and even farm animals.
The following describes the measures that are in place to mitigate for multiple hazards:

Existing Town-Wide Mitigation for Multiple Hazards

a) *Multi-Department Review of Developments* – Multiple departments, such as Planning, Zoning, Health, Public Works, Fire, Police, and Natural Resources, review all subdivision and site plans prior to approval.

b) *Comprehensive Emergency Management Plan (CEMP)* – Every community in Massachusetts is required to have a Comprehensive Emergency Management Plan. These plans address mitigation, preparedness, response and recovery from a variety of natural and man-made emergencies. These plans contain

important information regarding flooding, dam failures and winter storms. Therefore, the CEMP is a mitigation measure that is relevant to many of the hazards discussed in this plan. The CEMP is available online through secure access for town personnel.

c) *Enforcement of the State Building Code* – The Massachusetts State Building Code contains many detailed regulations regarding wind loads, earthquake resistant design, flood-proofing and snow loads.

d) *Local Emergency Management Planning Committee (LEPC)* – The LEPC consists of representatives from Public Works, Fire, Police, Health, School Transportation, Board of Selectmen, Emergency Management, Emerson Hospital, MCI-Concord, and local businesses. Concord is also part of a CrossRoads Regional Emergency Management Planning Committee (REPC) that consists of the towns of Acton, Lincoln, Weston, Wayland, Sudbury and Concord.

e) Emergency Preparedness public education is available on the town's website.

f) The town has a reverse 911 system and names can be added to the database via the town's website.

g) The Carlisle/Concord High School is the designated community shelter site, although it currently does not have a generator.

h) The Police and Fire Stations have a backup generator, but it runs on natural gas and would be inoperable in the event that the gas system was to go down. They do have backup diesel generators, but these are not as powerful.

i) The town has a Citizen Emergency Response Team (CERT) that provides training, supplies, and public education to neighborhoods.

j) The town also has a Medical Reserve Corps.

k) El Paso Tenneco Energy Company flies helicopter routinely and monitors flow and looks for leaks and damage in its natural gas line.

l) The town has a critical responder shelter center.

m) The town works with the Council on Aging to help provide shelter to the elderly during extreme heat.

Compilation of Existing Mitigation

The following table summarizes the many existing natural hazard mitigation measures already in place in Concord. Because of the number of entities, public and private, involved in natural hazard mitigation, it is likely that this list is a starting point for a more comprehensive inventory of all measures. Please note that the numbers shown in parentheses correspond to the Hazard Areas of Concern included on the maps in Appendix A.

Table 14: Existing Natural Hazard Mitigation Measures in Concord

Hazard	Area	Mitigation Measure
Flood-Related	Town-Wide	A) The town participates in the National Flood Insurance Program and has adopted the effective FIRM maps. The town actively enforces the floodplain regulations. B) Stormwater system mapped in GIS C) Annual catch basin cleaning and annual street sweeping D) Drainage system maintenance is performed as needed, and under a general maintenance permit issued by the Natural Resources Commission E) Long-term stormwater plan and funding, and ongoing system improvements F) Beaver mitigation G) Flood Plain Conservancy District H) Wetlands Conservancy District I) Massachusetts Stormwater Policy J) Stormwater Requirements in Subdivision Regulations and Site Plan Review K) Open Space Residential Developments allowed L) Groundwater Conservancy District M) Protected open space and proactive land preservation programs N) Public Education on stormwater through the NPDES Phase II program
	Pine Street Bridge (2)	Under reconstruction by the state for structural upgrades, not necessarily to improve water flow
	Commonwealth Ave at Warner's Pond (3)	Warner's Pond Dam is currently under reconstruction, which will help alleviate flooding at this location.
	Pedestrian Bridge at Warner's Pond (4)	Warner's Pond Dam is currently under reconstruction, which will help alleviate flooding at this location.
	Sudbury Road – Heath's Bridge (6)	Under reconstruction by the state
	Concord Center (9)	The Mill Dam culvert under Main street is currently being rehabilitated.
	Cambridge Turnpike (10)	Future improvements to Crosby Dam (private owner) will help alleviate some flooding at the Cambridge Turnpike.
	Nashawtuc Road-Nashawtuc Bridge (21)	Jersey barriers have been installed to maintain the side walls. Professional engineering services are being solicited by the town for proposed repairs.
	Crosby Pond (24)	Town has lowered pond levels in anticipation of flooding. The owner is currently in the process of upgrading the dam.
	Monument Street – Flint's Bridge (26)	This bridge is scheduled for upgrades by the state.

Table 14: Existing Natural Hazard Mitigation Measures in Concord

Hazard	Area	Mitigation Measure
Dams	Town-Wide	A) DCR Dam Safety Regulations B) Construction permits required
	Warner's Pond Dam	Currently being reconstructed
	Crosby Pond Dam	Town has lowered pond levels in anticipation of flooding. The owner is currently in the process of upgrading the dam.
Wind-Related	Town-Wide	A) Tree Maintenance Program by Public Works B) Tree Maintenance Program by Concord Municipal Light C) Requirement for new developments to install underground utilities D) Town continually removing existing overhead wires and installing them underground
Winter-Related	Town-Wide	A) Standard snow operations, restricted salt B) Overnight parking ban November – April C) Public Education on snow operations and winter maintenance is on the town website D) Snow and Ice Disposal Bylaw E) Public Education on how to prevent roof collapses from snow loads F) Sufficient space for municipal snow storage
Fire-Related	Town-Wide	A) Open burning permits required B) Fire Department reviews all development plans C) Fire Department provides public education on its website D) Fire Department is trained for protecting the Federal Wildlife Preserve and National Park E) Fire department obtained new brush fire vehicle in 2006 F) Town provides public education on drought watches
Geologic - *Earthquake*	Town-Wide	A) Shelters and backup facilities available (see multi-hazard mitigation below) B) Water Department able to isolate portion of the water system and identify alternate firefighting supply sources C) Evacuation plan in CEMP
Geologic - *Landslides*	Town-Wide	A) Maximum slopes for subdivision roads B) Earth Removal Bylaw

Table 14: Existing Natural Hazard Mitigation Measures in Concord

Hazard	Area	Mitigation Measure
Other – Bridge Weight Restrictions	Pine Street Bridge (2)	Currently being upgraded by the state
	Flint's Bridge on Monument Street (26)	Scheduled for upgrades by the state
	Main Street Bridge b/t Elm and Wood	No planned upgrades underway
Multi-Hazard	Town-Wide	A) Multi-department review of developments B) Comprehensive Emergency Management Plan (CEMP) C) Enforcement of State Building Code D) Local Emergency Management Planning Committee (LEPC) and CrossRoads Regional Emergency Management Committee (REPC) E) Emergency Preparedness public education on the town website F) Reverse 911 G) Carlisle/Concord High School is designated as a community shelter (although it has no generator) H) Police and Fire Stations have backup generators (although they are on natural gas or are limited diesel) I) Citizen Emergency Response Team (CERT) J) Medical Reserve Corps K) El Paso Tenneco Energy company monitors its gas line L) Sheltering available for elderly during extreme heat