CHAPTER 2
CONDITIONS AND REQUIREMENTS
FOR DEVELOPMENT PROJECTS
CHAPTER 2
CONDITIONS AND REQUIREMENTS FOR
DEVELOPMENT PROJECTS

Section 200 General Summary

In addition to the requirements contained in this document, applicants seeking development approval from the Town Essex must also meet the requirements of this section and the Town's Subdivision and Zoning Regulations and all adopted ordinances of the Town, including but not limited to Chapter 9.02, Highways, Chapter 10.12, Water Use, Chapter 10.16, Sewer Use, Chapter 10.18, Wastewater Allocation and Chapter 10.20, Storm water.

Engineering data on public facilities is required at each stage of the plan review process. Upon approval of the plans for facilities by the appropriate Town Board and the Public Works Director/Town Engineer, there must be a pre-construction meeting prior to the initiation of construction.

During construction, inspection is required both by the developer and the Town of Essex. Upon completion of the construction and testing, the project developer's engineer will be required to certify that all construction was in accordance with the approved plans/specifications and all requirements found within this document.

Following final approval by the Town of all plans, construction, testing and engineering verification, the Town will approve the project and accept the infrastructure associated with the public utilities. Acceptance of public streets and certification to the State of Vermont of such road acceptance requires formal approval by the Selectboard. On all development projects requiring a Highway Agreement, the developer is responsible for the condition of all infrastructure for three years from date of road acceptance by the Selectboard. During the three (3) year period, the Town will maintain winter access by plowing the new public roads. Before the three (3) year warranty begins, the project developers engineer shall provide a completed Verification of Utilities (Infrastructure) form, found in Appendix B of this document to the Town of Essex.

Section 210 Engineering Plans

At each stage of a project's development, engineering plans and documentation are required to determine project compliance with Town standards. This includes the verification of the location and identification of existing utilities. The level of engineering detail required for approval generally increases with each stage of development approval.
All engineering plans or documentation of an engineering nature submitted to the Town of Essex must be prepared by, or under the direct supervision of, a VT licensed Professional Engineer as set forth in Title 26, Section 1161. The term "Professional Engineer" as used in Title 26, Section 1161 means "... a person licensed under this chapter "Qualified" in the opinion of the Town of Essex means having a current VT professional engineer’s license in a discipline related to preparation of development plans such as but not limited to civil, water resources or the like, or working under the direct supervision of, and in the employment of a VT licensed Professional Engineer.

211.0 **Subdivision Sketch Plan**

The degree of engineering detail shall generally be at the feasibility level, to include preliminary information on proposed roads, drainage, sewer, water and other utilities.

The purpose of sketch plan reviews by Public Works is to provide very broad general comments on the feasibility of the project and to identify any permits or potential issues that may affect the ability of the project to obtain further approvals. Engineering studies need to be directed towards resolution of the following questions:

1. Will the proposed roads be able to meet the Public Works Standards and Subdivision Regulations with respect to surface type (gravel / paved), grade, curve radius, length, width, capacity, sight distance, surface drainage etc.?
2. Is there adequate water (pressure and flow) and is it of adequate quality (non-municipal on-site wells)?
3. Is there available and adequate sewer capacity?
4. Can adequate drainage be designed and constructed to limit off-site impacts?
5. Are there other elements of an engineering nature, which cannot be resolved on the project?
6. For developments within the Town of Essex designated sewer core, the issue of wastewater allocation for the project must be resolved prior to submittal of preliminary plans. This may involve Selectboard approval.

212.0 **Subdivision Preliminary Plan**

The intent of the plan review at this stage is to insure that all major issues have been addressed to the extent that the project, if constructed, can demonstrate compliance with Town standards and accepted engineering
practice. Only minor details not impacting the viability of the project should be left for consideration during the final design stage.

At this stage of the request for approval, it is expected that complete final design plans/specifications have been submitted for review and reports/study results have been submitted as noted later in this section. The Subdivision Regulations are explicit on what is required with respect to plans/specifications. Technical checklists are also available from the Community Development office.

Impact studies/reports must be completed such as traffic access and impact, water or sewer system impact, drainage calculations, etc. The general content of these studies should include the following:

1. A storm water study which addresses storm water conditions, impervious and disturbed area calculations, impacts and design compliance to meet applicable local and state requirements.
2. A utility report which addresses the anticipated domestic water and wastewater usage using the values according to the Town ordinances and compliance with the Town’s wastewater allocation process. Fire demand estimates and the ability of the Town’s water system to meet the fire demands shall be provided. Designs shall be submitted to meet or exceed any deficiencies between the Town’s ability to serve the proposed development and the development’s utility requirements.
3. A traffic study as outlined in Section 220 of this document.
4. Any additional studies which may be required to address issues with infrastructure or facilities to be installed as part of the project.
5. All engineering studies expire two (2) years following the date of Town preliminary approval, unless construction has been initiated or the time requirement is extended by the Public Works Director/Town Engineer.
6. Specific details, such as sewer trench cross-section details, pump station layout, etc. would be beneficial at this stage but may be omitted if the details in these Specifications are referenced.

213.0 Subdivision Final Plan

Without exception, all Preliminary plan review comments shall be addressed at this stage.

Plans submitted at this stage shall be 100% complete and ready for construction. All details of construction must be included and all impacts must be identified and resolved prior to submittal for final approval.
The Public Works Director/Town Engineer will approve final plans only after they are determined to be complete and ready for construction.

214.0 **Zoning / Site Plan Review**

Development Site Plan requirements are set forth in the current version of the Town of Essex Zoning Regulations and in Title 24, Section 4414, VSA. In reviewing site plans, the Planning Commission may impose appropriate conditions and safeguards with respect to conformance of the project to the Town Plan, Dimensional requirements of the Zoning Regulations, Aesthetics, outstanding violations, natural features (including topography, surface waters and wetlands), pedestrian access, lighting and fire protection.

Adequacy of sewer / water / drainage are not required for site plan review but are required as part of building permit application. It is recommended that resolution of any sewer / water / drainage issues be made concurrently with the submittal of plans for site plan review.

In general, the same type of studies required under Section 212 of these specifications shall be required as part of the Public Works' approval process for site plan and building permit review. The detail and extent of the report is anticipated to be commensurate with the scale of each building project.

**Section 220  Traffic Studies**

One of the major issues requiring resolution in the development of all projects is the traffic access and impact. The following guideline has been developed to assist in determining the need for traffic studies and analysis of impacts.

A completed traffic study, encompassing some or all of the requirements listed under study content will be required for all commercial and industrial developments and/or expansions and for any residential project with 10 or more living units. All projects involving any new or revised road curb-cuts regardless of type or size will at a minimum require a sight distance, estimate of traffic generation, drainage impact and safety analysis. Because each project is unique, the Town reserves the right to modify the guidelines accordingly.

All traffic studies, except those involving simple curb-cut issues, must be prepared and submitted by a VT professional engineer, with specific engineering experience in the development of such studies. Exceptions to this requirement may be considered for minor projects with approval of the Public Works Director/Town Engineer.
Prior to development of a traffic study, it is recommended that consultation be made with the Public Works Director/Town Engineer to verify the needed level and complexity of the traffic study for the specific project.

### 221.0 Scope of Study

The general scope of the study shall include the impacts of project driveways and intersections, project and adjacent street(s) traffic volumes, Levels of Service, delays of the project on adjacent signalized and un-signalized intersections, and other locations as stipulated by the Public Works Director/Town Engineer.

### 222.0 Analysis Periods

The analysis periods shall be:

1. Base year - time of project or major phase completion.
2. Planning year
3. If the project is fully completed in the base year - base year plus five years.
4. If the project is not fully completed in the base year - base year plus five years or year of final completion, whichever is longer.

### 223.0 Study Content

Each traffic study shall contain the following information available for review. The degree of emphasis placed on each element may vary with the scope and complexity of the project.

1. An analysis of existing conditions must be performed:
   a. Geometrics of immediate access points, affected highways segments and intersections, and impacted existing traffic control devices.
   b. Speed limit information in the Study area.
   c. Sight distances (intersection and stopping at the proposed access points)
   d. Traffic data counts and turning movements at or in the vicinity of the access point and affected highways /intersections
   e. Information on approved but not yet constructed development in the vicinity of the proposed access point or pending highway improvements directly affecting the Study area

2. The traffic characteristics of the proposed project must be defined.
   a. General description of the project
b. General layout of the access and adjacent road

c. Trip generation rates from the latest ITE Trip Generation Manual or in the absence of ITE data, reliable trip generation data from similar facilities

d. Project phasing impacts on traffic generation

3. The traffic projection needs to be developed and analyzed for the following scenarios

a. Construction year no build (background traffic)
b. Construction year build (background and project traffic)
c. Planning year no build (background traffic & growth)
d. Planning year build (background & project traffic & growth)
e. The data shall be presented in tabular form

4. Capacity and Warrant Analysis must be provided.

5. Documented warrant evaluations for:

a. Geometric needs in terms of 30th highest hour volumes.
b. Signal needs in terms of average weekday volumes.

6. Traffic performance evaluations for all study locations in terms of 30th highest hour volumes for the selected analysis periods.

a. Numerical measures of capacity.
b. Level of service descriptions, delay and gap calculations.

7. Study of proposed driveway(s) features

a. Sight distances
b. Non-interfering approach speeds on the intersecting street or road
c. Acceptable spacing with respect to adjacent intersections and/or major driveways
d. Recommended driveway configuration in terms of number and use of lanes, lane widths, turning radii, and edge of pavement designs.

8. Safety evaluation on main roadway or intersection at project driveway(s).

a. Summary of accident characteristics for the past five years by:
   i. Cause
   ii. Type
   iii. Severity

9. Comparison of actual and critical accident rates

a. Roadway - accidents per 1,000,000 vehicles
b. Intersection - accidents per 1,000,000 incoming vehicles

10. Recommended improvements for any accident prone locations

11. Summary of any recommended geometric and/or control improvements to provide proper traffic performance and safety.

12. A summary of findings and recommendations for mitigation of impacts must be provided.

   a. Geometric improvements
   b. Signal installation or re-timing
   c. Access management
d. Other, i.e. traffic calming measures.

224.0 Complete Street Compliance

All new developments shall include infrastructure features that comply with the latest Complete Streets Guidance promulgated by VTrans or the VT Department of Health in compliance with the State of Vermont Complete Streets Law, 19VSA, 309d.

225.0 Miscellaneous Requirements

1. Facilities for pedestrians, bicyclists, and/or handicapped persons.
   a. As part of any traffic study, consideration shall be made for pedestrian, bicycle and other features and documentation of consideration shall be provided within the traffic study.
   b. All development projects shall either construct off-road pedestrian/bicycle facilities along the public road frontage or shall provide funds equal to the cost of such facilities along the project’s road frontage in lieu of such construction. Projects may also be required to provide easements along the project’s road frontage for future walks/paths. Payment in lieu of walk/path construction may be made to the Town if determined appropriate to the scope of the development project. Estimates of payment costs in lieu of walks shall be established on a case by case basis based on linear footage required and cost estimates determined by the Public Works Director/Town Engineer. At such time as the Town may develop a sidewalk/path impact fee, said fee will determine the costs to be paid.
   c. Mid-block pedestrian crossings are discouraged but may be approved by the Public Works Director/Town Engineer in unique situations and only with appropriate signage, striping and/or other controls.
   d. All new sidewalks and paths shall be fully ADA compliant, including any existing sidewalks or paths impacted by and generally adjacent to the project.

2. Evaluation of internal circulation
   a. Internal traffic circulation shall be evaluated by the design engineer using templates to enable safe onsite movement of all traffic and to prevent traffic movement conflicts, especially in the vicinity of both internal intersections and development intersections with existing public roads.

3. Parking requirements
a. All parking spaces shall be designed to minimize conflicting traffic movements, to minimize the impact of parking movements near intersections and to minimize the impact of impervious surfaces with respect to storm water discharges.

4. Dig-Safe requirements
   a. Dig Safe shall be notified prior to any excavation within the Town of Essex.
   b. The Town of Essex is not a member of Dig-Safe. Public Works must be contacted to provide information on buried municipal water, sewer and storm drainage lines.

Section 230 Plan Approval Actions

Upon receipt of acceptable final engineering plans, the Public Works Director / Town Engineer will approve the plans for construction. Prior to proceeding with construction, a pre-construction meeting will be required. Three sets of paper working drawings will be submitted to the Public Works Department prior to or at the pre-construction meeting as well as an electronic copy of the plans and specifications. Furthermore, an estimate of the project cost must be submitted as part of the requirement for a project bond on quantity estimate sheets as noted in the Appendix to this document.

Section 240 Project Bonds and Letters of Credit

A Highway Agreement similar to that found in Appendix C of these specifications shall be executed between the Town of Essex and the developer prior to the start of construction on any project which will involve infrastructure that is intended for acceptance by the Town.

All of the public works improvements to be dedicated to the Town of Essex shall be guaranteed by a bond or letter of credit provided to the benefit of the Town at no cost to the Town. The bond shall be in an amount sufficient to cover 100% of the total estimated construction costs of the improvements as approved by the Town Engineer. The bond shall be conditioned upon the satisfactory completion of the improvements for a period of three years from the date of written construction acceptance by the Town.

In some cases, and only with the agreement of the Public Works Director/Town Engineer, a developer may opt to initiate construction after a Highway Agreement has been signed and total project cost estimates provided to the Town, but not post a Letter of Credit or Bond at start of construction. This shall only be allowed if the developer creates an escrow account with a balance of 100% of the total estimated project costs.
Prior to establishment of a satisfactory dollar value for the bonds or escrow account, the developer shall submit an accurate construction estimate on the form outlined in Appendix C of these Specifications. The completed document shall be submitted to the Town Engineer for review and approval prior to posting of a bond or letter of credit. Releases to the bond will be made based on satisfactory progress, but no more than one release per month will be allowed because of processing requirements.

The developer is required to notify the Town if the actual construction costs exceed the Letter of Credit approved estimate by 15% or more. If this occurs a revision to the dollar value of the Letter of Credit shall be made such that all release payments and the final 10% guarantee for three years shall reflect the new construction estimate.

New highway agreements are written with a 15-month construction period. The 36-month guarantee period includes a 10% retainage on the highway agreement.

Requests for extensions of the 15-month construction period must be made by the developer to the Town in writing. If a request for an extension is not made prior to the expiration of the Letter of Credit, a fine may be imposed on the developer. The fine may be up to 1% per month of the original letter of credit estimate for every month over the original 15 month construction period or any extension thereof. Such fine is non-refundable and must be paid in full prior to any acceptance of infrastructure by the Town.

Projects are generally split into phases with a separate highway agreement for each phase. To avoid conflicts over reductions in payment and questions over responsibility for winter maintenance during construction, the following procedure is established.

1. Partial releases will be made for storm sewers, provided the constructed portion for which the release is requested is functional and approvable.
2. Partial releases for water and sewer will not be made until sections of sewer or water lines are 100% complete, tested and accepted by the Town. No credit will be given for the cost or partial construction of these systems.

A letter of credit is not required to be posted with the Town until the first building permit is requested. The Town will acknowledge construction completed to date and allow a reduced letter of credit to be filed. However, the filed letter of credit cannot drop below the following:

1. 15% of the original cost (if Record Drawings are not provided) plus the cost of any remaining work required work.
Section 250 **Highway Agreement**

All development projects that involve the construction of infrastructure intended or required for transfer to the Town upon completion of construction shall be required to have a signed highway agreement prior to initiation of construction. The developer shall submit a signed Highway Agreement and an accurate construction estimate of the total cost of the project on a Town form at the pre-construction meeting.

The construction cost estimate must be submitted on the cost estimate form provided in Appendix C of these Specifications. The cost estimate shall be submitted to the Town and approved as being representative of the project costs prior to acceptance of the Highway Agreement.

New development agreements are written with a 15-month construction period. If the construction period is anticipated to extend beyond the 15-month period, then application must be made in writing to extend the construction period beyond the 15 months. Following Town acceptance of the construction there is a 36-month warranty period on all installed, new infrastructure.

Projects are generally split into phases with a separate highway agreement for each phase. To avoid conflicts over reductions in payment and questions over responsibility for winter maintenance during construction, the following procedure is established.

1. The Town of Essex Public Works will provide winter snow removal services during the first winter of the highway construction phase provided that the base course asphalt is in place and all applicable safety devices (i.e. guardrail) have been installed. All sewer manholes, catch basins, valve boxes and similar structures that may exist in the roadway, must be protected at the Project Developers expense. These items shall be installed to base course grade and raised at final paving with adjustable grade rings. Any plow damage to structures caused by inadequate grade adjustment shall be repaired by the Project Developer at no cost to the Town. If only the base gravel course has been constructed, the Project Developer shall be responsible for plowing, salting, and sanding all unpaved streets. Building permits should generally not be requested for streets, which cannot have a base course of pavement on them prior to winter.
2. It is recommended that the top course of asphalt not be laid during the first season of construction. Construction settlements or frost damage historically shows up the following spring. By postponing the top course, corrections can be made at less expense to the developer. It should be noted however, heavy construction vehicles traveling over a thin base may destroy the base course prior to paving the top course. To alleviate this problem, the base course should be 2 1/2" thick if allowed to sit the winter or construction equipment should be kept off the paved base course until the final course is applied.

Section 260 Pre-Construction Meetings

Before a pre-construction meeting can be held, the developer must provide the Community Development Office with the following information:

1. Proposed or Executed Highway Agreement
2. All deeds, irrevocable offers of dedication and/or easements
3. Cost estimate for construction
4. Project Construction Schedule
5. Evidence that all the requirements and conditions imposed by the Planning Commission, Zoning Board or Select board have been addressed.
6. Three (3) copies of all approved project plans and specifications and an electronic copy shall be provided to the Town of Essex prior to or at the pre-construction meeting.
7. Evidence that the required mylar depicting all lots, rights of way and easements has been recorded.
8. Copies of any permits issued on the project by parties other than the Town, such as but not limited to permits to work in the State Highway Right of Way, State storm water permits and Act 250 permits, shall be provided to the Town.

Following receipt, review and approval of the noted documentation, the Town of Essex will schedule a pre-construction meeting. In attendance will be:

1. Project Owner / Project Developer
2. Project Engineer
3. Contractor
4. Contractor’s Project Superintendent or Foreman (if applicable)
5. Utility Contractor (if applicable)
6. Roadway Contractor (if applicable)
7. Building Contractor (if applicable)
8. Town of Essex Public Works representative(s).
9. Town of Essex Community Development representative(s).
The meeting will consist of exchanging information between the developer and his/her Contractors and the Town. Specifically, the developer should be prepared to discuss:

2. Project phasing and timing
3. Utilities connection/extension
4. Anticipated paving schedule
5. Plans for winter treatment of roads
6. Storm water control features to include erosion and dust control measures
7. Haul routes
8. Project supervision
9. Safety
10. Traffic Control
11. Specific permit requirements

The Town will discuss and review specific portions of the Public Works Specifications, including the highway agreement, utility testing, service connection procedures, water meter installations, road preparation, notification procedures and other related items.

Section 270 Engineering Services

The developer is required to have a qualified engineer inspect the project during construction for the purpose of providing verification of tests and also to verify that the project was constructed substantially in accordance with the approved plans, and these specifications. Upon completion of the project or phase of a larger project, the Project Engineer must make a written verification to the Town on the form entitled Town of Essex, Verification of Facilities. This certificate is provided in Appendix B of this document.

The Engineer may also be required to provide certification to other governmental agencies, such as the State of Vermont, on the acceptability of selected elements of the installed infrastructure. Copies of these certifications shall also be provided to the Town of Essex.

The Town of Essex reserves the right to require the project developer to increase the level of engineering inspection based upon the complexity of construction and/or degree of compliance by the project Contractor with the Town specifications. In the event that the Project Developer fails to provide the added level of construction inspection services, the Town of Essex shall notify the developer in writing of failure to comply with the approved plans and/or the Public Works Specifications. If inadequate action is taken to correct the issues within 3
calendar days the Town of Essex shall retain the services of a third party consultant to perform the construction inspection, and the cost of those services shall be borne by the Project Developer.

Section 280 Final Project Inspections

Inspections of the accepted infrastructure shall be periodically conducted by the Town of Essex during the 3-year warranty period. Deficiencies found as a result of these inspections shall be corrected by the Project Developer at no cost to the Town. In the event that the noted deficiencies are not corrected, the Town shall identify the costs associated with the correction of the deficiencies and withhold these costs from the release of funds held for the 3-year warranty period; the funds shall then be used by the Town to correct the deficiencies.

A joint inspection involving the Town of Essex, the Project Developer and/or the project engineer shall be conducted prior to the end of the 3-year warranty period. Deficiencies found during this inspection shall be handled as noted in the preceding paragraph. If no deficiencies are noted, the Town shall provide a letter to the developer releasing the remaining letter of credit funds and releasing the developer from future responsibility relative to the installed infrastructure.

Section 290 Miscellaneous Requirements

291.0 Street Names

No duplicate, or near duplicate, names for streets or developments will be allowed. When a developer chooses names for any development, subdivision, street, or road, the proposed names shall be submitted in writing to the Community Development Director. The name(s) shall then be reviewed by the Town GIS coordinator and submitted to the Selectboard with a recommendation for approval. The final approval authority for all street names is the Selectboard.

292 Street Signs

The developer is responsible for the purchase and installation of street signs and posts as well as all traffic control devices and road striping. The Town will provide the developer with the approved names for new public roads as noted under Section 291.0. It shall be the responsibility of the developer to purchase necessary sign posts and accessories and to install the signs. The Contractor shall contact Dig-Safe, and the Town of Essex Public Works Department, in the case of buried water, sewer and storm lines, prior to installing posts in the vicinity of underground utilities.
293 **Street Numbers**

Prior to submittal of the property plat for Town approval and recording, the Project Developer shall obtain the street numbers for each building lot from the Town Assessor's Office. The final plans will include street numbers as well as lot numbers.

Within each development, the Project Developer, as a condition of sale for each lot or structure, shall ensure that street numbers are installed per the following requirements:

1. The numbers shall be placed on the structure of the house at a point no more than two feet (2') away from the frame of the front door, or on the mailbox at the road edge if applicable.
2. The numbers shall be in the form of a minimum of two-inch (2") high Arabic numerals and shall be on a color contrasting to the surface of which they are placed or on a self-contained contrasting background.

294.0 **Traffic Signs and Striping**

The developer shall be responsible for ensuring the erecting of all temporary construction and permanent traffic control devices, including striping, necessitated by the construction of the roadway. The Manual on Uniform Traffic Control devices shall be the controlling document for installation of signs and all road surface markings.

In the event other traffic control devices such as signals are warranted, according to the Manual on Uniform Traffic Control Devices (MUTCD), the developer shall be responsible for installing and timing of signalization at his/her own expense. Timing corrections to all new and existing equipment within the project area may be necessary following initial installation and periodically throughout the 3-year warranty period. The developer shall be responsible for all costs associated with this work through the 3-year project warranty period.

In addition, any road striping such as walkways, stop bars, median striping and the like shall be installed and maintained for 3 years by the Project Developer at his or her own expense.
295.0 **Emergency Vehicle Access**

In order to provide adequate emergency protection, any plans submitted for consideration to the Town of Essex for multi-family, commercial or industrial buildings shall have suitable access provided for fire and emergency vehicles.

The need for a separate emergency access road for these buildings will be considered by the Town Planning Commission on a case-by-case basis.

If required, a separate emergency access road must be able to support the weight of a two-axle forty thousand pound (40,000#) truck. Preferred construction should be bituminous concrete, as per the specifications for paved public roadways, although gravel roadways will be accepted if they conform to the weight specification above.

Emergency access roads must be passable year round.

296.0 **Landscaping**

The Planning Commission of the Town of Essex may require the planting of new trees or other vegetation in areas where no trees presently exist, within the area disturbed by new construction, or in an area in which substantial loss of trees has or will occur in the process of road construction.

Such trees shall be preferably of a type indigenous to the neighborhood, of a salt tolerant variety and approved by the Town tree warden. Tree varieties shall be mixed along a public roadway such that no single tree variety is the only planted species. Such trees shall be planted in fertile or fertilized ground and shall be watered and nurtured after planting until growth is assured.

Trees shall have a minimum diameter of trunk at a point four feet (4’) above ground level of at least two inches (2”). They shall be planted at intervals of no more than sixty (60’) on both sides of the street. Such trees shall be clear of any branches from ground level to a point six feet (6’) above ground level. All new trees shall generally be planted outside of the street right-of-way or on the property line/right-of-way boundary. Street trees planted within the area between the curb or outside edge of gravel shoulder and the right of way limit shall only be allowed with concurrence of the Public Works Director/Town Engineer. Street trees shall be guaranteed for five (5) years from the date that the new road is accepted by the Town.