

RULES and REGULATIONS
for
LOWER IMPACT DEVELOPMENT
(LID)
SPECIAL PERMITS

EFFECTIVE DATE: September 21, 2015

Adopted by Southborough Planning Board: September 21, 2015

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PREFACE

Land development projects and their associated changes to land cover, permanently alter the hydrologic response of local watersheds and

increase stormwater runoff rates and volumes, which in turn
increase flooding, stream channel erosion, sediment transport & deposition, and
decrease groundwater recharge.

Communities are dealing with the unintended consequences of conventional approaches to site design and stormwater management: stressed watersheds, polluted waterways, loss of wildlife and aquatic habitats, and unattractive development that is contextually different from the historic character. Standard design practices often create a large 'ecological footprint' because they treat hydrology as a problem, not as a natural system. The typical approach to site planning is to clear it, grade it, and pave it; then collect the stormwater and dispose of it through a system of pipes and ponds that collect rainwater and discharge it off site.

Recent studies have shown that conventional stormwater design and management practices

are not sufficient to improve the water quality of surface water bodies. Therefore, the Town of Southborough has adopted a Lower Impact Development Bylaw. Lower Impact Development (LID) is a comprehensive land planning and engineering design approach to development with a stated goal of maintaining and enhancing the pre-development hydrology. LID is implemented by engineering a site in a manner that will ensure that the post-development hydrologic functions remain close to those that existed prior to development.

The basic premise of a LID bylaw is to establish tools, techniques and protocols for reducing the impact of development on the environment through good environmental designs that also make good economic sense. LID techniques create on-site storage, maximize opportunities for infiltration, slow down the flow of surface runoff, detain/retain water, and remove pollutants. The idea is to create developments that are integrated with the natural landscape, so that rainwater is treated by natural processes and goes back into the ground or flows into waterways at a normal rate. In LID, stormwater is managed with a distributed network of swales and rain gardens, rather than a centralized system of pipes and ponds. As a result, aquifers are recharged, streams and rivers are cleaner, and development has a more natural appearance. The reliance on natural processes also means that there are fewer pipes and ponds to build and maintain, saving money for the developer and the community.

The Town's general preference is that stormwater be conveyed and treated in natural and vegetated systems such as bioretention cells, vegetated swales, filter strips, constructed wetlands, and pervious pavement. These practices have gained support from the US EPA because of their generally superior performance in attenuating peak runoff rates, filtering pollutants, recharging groundwater, and allowing retention of the natural landscape. The Town also recommends a number of BMPs that utilize onsite storage in lieu of or prior to connection to the Town's municipal separate storm sewer system (MS4).

In 2003, the Town of Southborough adopted the Town of Southborough Stormwater Management Plan, which was developed in consultation with Fuss & O'Neill, Inc. One of the recommendations of the Stormwater Management Plan is to amend the land development regulations to address both construction and post-development controls for stormwater facilities. These regulations are promulgated to support and implement the Town of Southborough Lower Impact Development (LID) Bylaw.

SOUTHBOROUGH LOWER IMPACT DEVELOPMENT SPECIAL PERMIT RULES and REGULATIONS

SECTION 1. GENERAL PROVISIONS

1.1 Authority

The Rules and Regulations (Rules) contained herein have been adopted by the Town of Southborough Planning Board in accordance with the Town of Southborough Lower Impact Development (LID) Bylaw, and as authorized by MGL Chapter 40A.

1.1.1 Nothing in these Rules is intended to replace or be in derogation of the requirements of the Town of Southborough Stormwater and Erosion Control Bylaw, the Town of Southborough Wetlands Protection Bylaw or the Town of Southborough Floodplain Zoning Bylaw or any Rules and Regulations adopted thereunder.

1.1.2 These LID Rules may be periodically amended by the Planning Board in accordance with the Town of Southborough LID Bylaw.

1.2 Purpose

The purpose of these LID Rules is to protect, maintain and enhance the public health, safety, environment, and general welfare by establishing minimum requirements and procedures to control the adverse effects of increased post-development stormwater runoff, decreased groundwater recharge, and nonpoint source pollution associated with new development and

redevelopment, as more specifically addressed in the LID Bylaw of the Town of Southborough.

The purpose of these Rules is to establish uniform Rules and procedures for conducting the business of the Planning Board under its jurisdiction as a Special Permit Granting Authority for the Southborough LID Bylaw (Section Chapter 174-13.3 of the Bylaw).

1.3 Applicability

Any person applying for a Special Permit under Chapter 174-13.3 of the Bylaw, whether or not governed by any other federal, state or local Rules, laws, permits, variances, approvals, or programs, shall comply with the provisions of these Rules.

A LID Special Permit shall be required from the Planning Board for the following:

1.3.1 Any activity subject to Major Plan Review (§ 174-10);

1.3.2 Any activity that will result in soil disturbance of one acre or more;

1.3.3 Any residential development or redevelopment of five (5) or more acres of land proposed pursuant to “the Subdivision Control Law” G. L. c. 41 sec. 81K to 81GG inclusive, or proposed under a special permit process pursuant to G. L. c. 40A sec. 9.

1.4 Definitions

The definitions contained herein apply to issuance of a LID Special Permit established by the LID Bylaw of the Town of Southborough and implemented through these LID Rules. Terms not defined in this section shall be construed according to their customary and usual meaning unless the context indicates a special or technical meaning.

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Agriculture	The normal maintenance or improvement of land in agricultural or aquacultural use, as defined by the Massachusetts Wetlands Protection Act (M.G.L. c. 131 § 40) and its implementing regulations (310 CMR 10.00).
Applicant	Any "person" as defined below requesting a LID Special Permit for proposed land disturbance activity.
Authorized Enforcement Agency	The Planning Board (hereinafter “the Board”) and its employees or agents or other employee of the Town of Southborough shall be in charge of enforcing the requirements of this bylaw.
Alter	Any activity that changes the water quality, or the force, quantity, direction, timing or location of runoff flowing from the area and will measurably change the ability of a ground surface area to absorb water. Such changes include: change from distributed runoff to confined, discrete discharge; change in the volume of runoff from the area; change in the peak rate of runoff from the area; and change in the recharge to groundwater on the area. Alter may be similarly represented as “alteration of drainage characteristics,” and “conducting land disturbance activities.”

Better Site Design	Site design approaches and techniques that can reduce a site's impact on the watershed through the use of nonstructural storm water management practices. Better site design includes conserving and protecting natural areas and green space, reducing impervious cover, and using natural features for storm water management.
Best Management Practice (BMP)	Structural, non structural, vegetative and managerial techniques that are recognized to be the most effective and practical means to reduce erosion and sediment, prevent or reduce increases in storm water volumes and flows, reduce point source and nonpoint source pollution, and promote storm water quality and protection of the environment. "Structural" BMPs are devices that are engineered and constructed to provide temporary storage and treatment of storm water runoff. "Nonstructural" BMPs use natural measures to reduce pollution levels, do not require extensive construction efforts, and/or promote pollutant reduction by eliminating the pollutant source.
Construction and Waste Materials	Excess or discarded building or construction site materials that may adversely impact water quality, including but not limited to concrete truck washout, chemicals, litter and sanitary waste.
Conveyance	Any structure or device, including pipes, drains, culverts, curb breaks, paved swales or man made swales of all types designed or utilized to move or direct stormwater runoff or existing water flow.

Disturbed Area	an area, man made or natural, where the existing condition has been or is proposed to be altered.
Disturbance of Land	Any action that causes a change in the position, location, or arrangement of soil, sand, rock, gravel of similar earth material.
Drainage Easement	A legal right granted by a landowner to a grantee allowing the use of private land for stormwater management purposes.
Environmental Site Monitor	A Professional Engineer, or other trained professional selected by the Board and retained by the holder of a LID Special Permit to periodically inspect the work and report to the Board.
Erosion	A condition in which the earth's surface, including soil or rock fragment, is detached and moved away by the action of water, wind, ice, gravity or other natural means.

Flood Control	The prevention or reduction of flooding and flood damage.
Flooding	A local and temporary inundation or a rise in the surface of a body of water, such that it covers land not usually under water.
Grading	Changing the level or shape of the ground surface.
Groundwater	All water beneath any land surface including water in the soil and bedrock beneath water bodies.
Infiltration	The act of conveying surface water into the ground to permit groundwater recharge and the reduction of stormwater runoff from a project site.
Massachusetts Stormwater Management Policy	The Policy issued by the Department of Environmental Protection, and as amended, that coordinates the requirements prescribed by state regulations promulgated under the authority of the Massachusetts Wetlands Protection Act G.L. c. 131 § 40 and Massachusetts Clean Waters Act G.L. c. 21, §. 23-56. The Policy addresses stormwater impacts through implementation of performance standards to reduce or prevent pollutants from reaching water bodies and control the quantity of runoff from a site.
Operation and Maintenance Plan	A plan that defines the functional, financial and organizational mechanisms for the ongoing operation and maintenance of a stormwater management system to insure that it continues to function as designed.
Person	Any individual, group of individuals, association, partnership, corporation, company, business organization, trust, estate, the Commonwealth or political subdivision thereof to the extent subject to Town Bylaws, administrative agency, public or quasi public corporation or body, the Town of Southborough, and any other legal entity, its legal representatives, agents, or assigns.

Post Development	The conditions that reasonably may be expected or anticipated to exist after completion of the land development refers to the phase of a new development or redevelopment project after completion, and does not refer to the construction phase of a project.
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Pre Development	The conditions that exist at the time that plans for the land development of a tract of land are submitted to the Planning Board. Where phased development or plan approval occurs (preliminary grading, roads and utilities, etc.), the first plan submission shall establish the existing conditions at the time prior to pre development conditions.
Recharge	The replenishment of underground water reserves.
Resource Area	Any area protected under including without limitation: the Massachusetts Wetlands Protection Act, Massachusetts Rivers Act, or Town of Southborough Wetlands Protection Bylaw.
Rules	The Rules and Regulations for a Lower Impact Development Special Permit as presented herein.
Runoff	Rainfall, snowmelt, or irrigation water flowing over the ground surface.
Sediment	Solid material, whether mineral or organic, that is in suspension, is transported or has been moved from its site of origin by erosion.
Sedimentation	A process of depositing material that has been suspended and transported in water.
Site	The parcel of land being developed, or a designated planning area in which the land
Slope	The vertical rise divided by the horizontal distance and expressed as a fraction or percentage,
Stabilized	The elimination of any erosion.
Stormwater Management Handbook	Stormwater Management Handbook, Volume One and Volume Two, prepared by the Mass. Department of Environmental Protection and the Mass. Office of Coastal Zone Management dated March 1997 as the same may be from time to time revised.
Stop Work Order	An order issued which requires that all construction activity on a site be stopped.

Swale	A Swale is a ditch on the contour. It does not direct water, but holds it and allows it to gradually infiltrate the soil down-slope of it. Gradual infiltration of water and nutrients slowly improves soil down-slope.
TSS	Total Suspended Solids.
Water Quality Volume (WQv)	The storage needed to capture a specified average annual stormwater runoff volume. Numerically (WQv) will vary as
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	a function of drainage area or impervious area.

1.5 Coordination with Subdivision Review

In the case where the LID requires approval under the "Subdivision Control Law", the Applicant shall submit an Application for Approval of a Definitive Subdivision Plan concurrently with its Application for a Permit hereunder. To the extent permitted by law, the Board shall consider the Definitive Subdivision Plan and the Application for a Permit at the same time.

1.6 Coordination with Other Permits

In the case where the proposed development or alteration is subject to the Wetlands Protection Act and/or the Southborough Wetlands Bylaw, the Applicant shall submit the required application/s with the Application for a Permit hereunder. The Board shall consider both applications at the same time.

1.7 Waiver of Rules

Strict compliance with these Rules may be waived if the Board finds that the waiver is allowed by federal, state and local statutes and/or regulations, is in the public interest or is irrelevant to the project, and is consistent with the intent and purpose of the Town of Southborough LID Bylaw and these Rules.

- 1.7.1 Any request from an Applicant for a waiver of these Rules must be submitted, in writing, to the Board at the time of submission of the Application. Such requests must clearly identify the provision/s of the Rules from which relief is sought and be accompanied by a statement setting forth the reasons why, in the Applicant's opinion, the granting of such a waiver would be in the public interest or the specific information required is irrelevant to the project, and demonstrating that strict application of the Bylaw does not further the purposes or objectives of this Bylaw.

1.8 Provision of Surety

The Planning Board may require the permittee to post with the Town before the start of land disturbance or construction activity, a surety bond, irrevocable letter of credit, cash, or other acceptable security to secure the satisfactory completion of all or any part of the work authorized under a Permit. The form of the surety shall be approved by town counsel, and be in an amount deemed sufficient by the Planning Board to ensure that the work will be completed in accordance with the permit.

- 1.8.1 No occupancy permit will be granted unless and until the construction of all site improvements are complete or the work remaining to be done is secured.

1.9 Amendments to the Rules

The Rules may be amended by a majority vote of the Planning Board in a public meeting.

2.1 Who May File an Application?

Anyone may file an application for a permit provided that the property owner of record has signed the application form thereby granting his/her consent to the filing of the application.

2.2 Application Fees

Any application shall be accompanied by a fee to cover the expenses incurred by the Town in reviewing the application. The fee is not refundable. The fee shall be submitted in check form and made payable to the "Town of Southborough". The amount of the fee shall be in accordance with the Planning Board's schedule of fees. Part of this fee may be waived if the Board chooses to have some of the review work performed by outside consultants as provided below:

2.2.1 Engineering and Consultant Reviews and Fees

- a) The Planning Board is authorized to require an Applicant to pay a fee for the reasonable costs and expenses for specific expert engineering and other consultant services deemed necessary by the Planning Board to come to a final decision on the application. This fee is called the "Engineering and Consultant Review Fee."
- b) Consultant fees shall be determined at the time of filing of an application based on a specific scope of work as the Planning Board or the Town Planner may determine.
- c) The Planning Board is authorized to require an Applicant to pay reasonable costs and expenses for certain activities which utilize the services of Town Staff. This includes such activities as inquiries concerning potential projects as well as site inspections not associated with a pending permit application.
- d) The Engineering and Consultant Review fees collected under this section shall be deposited in an escrow account.

2.2.2 Appeal From the Selection of the Consultants - The Applicant may appeal from the selection of an outside review consultant to the Board of Selectmen. The grounds for such an appeal shall be limited to claims that the consultant selected has a conflict of interest or does not possess the minimum required qualifications of an educational degree in or related to the field at issue or three or more years of practice in the field at issue or a related field. The Applicant must specify the specific grounds which the Applicant claims constitute a conflict of interest or a failure to meet minimum professional requirements.

2.3 Submission of an Application

Seventeen (17) complete copies of the application, of which ten (10) need to be full size plans and the balance 11x17 along with an electronic PDF copy and the required fees shall be submitted to the office of the Southborough Planning Board during normal business hours. After receipt of the application, the Town Planner will file a copy with the Clerk. The Applicant may request and shall be entitled to a receipt for the materials submitted.

At least seventeen (17) copies of any additional materials submitted after the initial filing of the application at shall be filed with the Town Planner. If significant information that was not included in the application is presented at the public hearing, the hearing may be continued to allow for staff review of the new material. Questions concerning this process should be directed to the

2.4 Review of Application

The Board will transmit a copy of an application to various other town departments, boards, committees, agencies or independent consultants in order to ensure full and qualified review of the application. The Board will make available to the Applicant upon request a copy of any comments or recommendations received.

SECTION 3. ADMINISTRATION

The Planning Board shall administer, implement and enforce these Rules. Projects or activities approved by the Planning Board shall be deemed in compliance with the intent and provisions of these Stormwater Rules. Should a land-disturbing activity associated with an approved plan in accordance with this section not begin during the 120-day period following permit issuance, the Planning Board may evaluate the existing stormwater management plan to determine whether the plan still satisfies local program requirements and to verify that all design factors are still valid. If the authority finds the previously filed plan to be inadequate, a modified plan shall be submitted and approved prior to the commencement of land-disturbing activities.

3.1 Application Form

Any Application for a Permit shall be made in writing and include the completed application form entitled "Application for a LID Special Permit" attached to these Rules and available from the office of the Board at the Southborough Town House. In the case where the Applicant is a person other than the record owner of the property, the Applicant must obtain the owner's signature on this form indicating that the owner has knowledge of and consents to the Application. If the Applicant is acting in the name of a trust, corporation or company, a letter documenting the authorizing vote shall be attached.

An Application for a Permit which lacks information or is incomplete in any manner may be denied or seriously delayed. It is the responsibility of the Applicant to assure the accuracy and completeness of all information submitted to the Board as part of an Application. The Applicant shall be responsible for factually supporting all points relied upon in the Application including references for methodologies used in design calculations.

3.1.1 Seventeen (17) copies of the Application including ten (10) full size plan sets and seven (7) 11x17 plan sets along with an electronic PDFcopy shall be required at the time of submission of an Application. All plan sheets and engineering calculations shall bear the seal of a Registered Professional Engineer, Registered Land Surveyor or Landscape Architect as appropriate to the data. Each copy of the Application shall be folded so that it will fit neatly into a letter sized file folder.

3.1.2 A complete Application for a Permit shall include at a minimum items a) through h) listed below and those items listed in Section 3 of these Rules.

- a) A completed Application Form with original signatures of all owners;
- b) A list of abutters, certified by the Assessors Office; (abutters at their mailing addresses shown on the most recent applicable tax list of the assessors, including owners of land directly opposite on any public or private street or way, and abutters to the abutters within 300 feet of the property line of the Applicant, including any in another municipality or across a body of water);
- c) LID Management Plan and project description;
- d) Operation and Maintenance Plan;
- e) Payment of the application and review fees
- f) Inspection and Maintenance agreement;
- g) Erosion and Sediment Control Plan;
- h) Development Impact Statement.

- 3.1.3 Entry - Filing an application for a permit grants the Planning Board, or its agent, permission to enter the site to verify the information in the application and to inspect for compliance with the resulting permit.

3.2 Certified Abutters List

A list of abutters, certified by the Assessors Office; (abutters at their mailing addresses shown on the most recent applicable tax list of the assessors, including owners of land directly opposite on any public or private street or way, and abutters to the abutters within 300 feet of the property line of the Applicant, including any in another municipality or across a body of water);

3.3 Other Permits, Approvals and Variances

List and copies of variances, special permits, and other permits previously issued by other Town boards or State and Federal agencies, and a list of any variances or permits required to complete the proposed work. This list should include but not be limited to any permits from the Board of Health, the Planning Board, the Board of Appeals, the Planning Board, Massachusetts Highway Department, the Army Corp. of Engineers, and the State Dept. of Environmental Protection; and certificates issued by the Secretary of Environmental Affairs under the Massachusetts Environmental Policy Act.

NOTE: If any other special permits are required from the Board, the Applicant is hereby strongly advised to make the applications for such additional permits concurrently with this permit application.

3.4 Recorded Plans and Deeds

A copy of the most recently recorded plan(s) and deed(s) for the lot(s) on which the work will take place bearing the book number(s), page number(s), and dated of recording(s) or registration(s).

3.5 Locus Plan

A locus plan at a scale no smaller than 1" = 1200' showing the area within a 1/2 mile radius of the site, Zoning Districts and property boundary lines, surface water bodies, wetlands, existing and future planned public wells, private wells, major roadways and other landmarks.

3.6 Site Composite Plan

One or more plan sheets with a detailed legend for all symbols used, and a detailed site data table for all relevant dimensional information, showing the following:

- 3.6.1 Groundwater Protection District Zone(s) in which the site and lot are located. District Zoning Boundary lines if on or near the lot.
- 3.6.2 Total lot area and areas of wetlands and land within the Flood Plain District on the lot (in percent and square feet).
- 3.6.3 Existing/Proposed areas (in percent and square feet) of impervious cover, open space, undisturbed open space with such areas clearly delineated on plan. Limits of clearance and disturbance as it will be staked and marked in the field for construction purposes.
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- 3.6.4 Natural Features, including surface water bodies, wetlands, Flood Plain District, natural drainage courses, ledge outcropping, vegetation, soils.
- 3.6.5 Existing and Proposed structures and impervious cover.
- 3.6.6 Pre and Post Development topography in 1 foot contours, with reference to the NGVD (national geodetic vertical datum) of 1929.
- 3.6.7 Contours of maximum groundwater elevations showing a sufficient number of test pits and test information to demonstrate reasonable accuracy of groundwater contour lines. Location of existing and proposed area on site with the shortest distance between the

surface and the maximum groundwater elevation.

- 3.6.8 Reference of location of nearest public wells and known private wells with distance and direction to them.
- 3.6.9 Storm drainage and runoff water renovation plan, showing the location and elevations of the various features of the site storm drainage and renovation system.
- 3.6.10 Erosion, sedimentation and siltation control devices to be utilized during construction.
- 3.6.11 Existing/proposed water supply well on site, if any.

3.7 Wastewater disposal plan

Level and type of wastewater treatment proposed, septage flow rates (in volume/day/1000 s.f. and total daily volume), land area needed to comply with the bylaw. Engineering Plan with Details for septic systems, treatment plants, sewer manholes, pipes, leaching areas etc. Any measures proposed to minimize Nitrate loading to the groundwater. Location of wastewater disposal system and its components. If site is located in ZONE 1 or ZONE 2, estimate of increase in nitrate concentration at the nearest public and private well due to the development.

3.8 Construction Detail Sheet

Construction details for entire site drainage and surface runoff renovation system including: pipe sizes; catch basins; manholes; detention/retention ponds with lining, vegetation and overflow structure; leaching facilities; floor drains; diversion boxes; slide gates; etc. Sedimentation, siltation, and erosion control devices. Details of tanks, containment structures, vapor recovery systems as applicable and of any other pollution control/prevention devices.

3.9 Drainage calculations, Renovation and Treatment of Runoff

Storm drainage runoff calculations and description of proposed surface runoff renovation concept. The calculations must be based on a recognized standard method (rational formula or Soil Conservation Service (SCS) method and must contain a written summary explaining the rationale of the design approach. Full documentation is required including charts, tables, diagrams and computer software used.

3.10 Earth Removal/Fill Calculations

Calculations for determining the volume of earth to be removed from or introduced to the site with full documentation of calculations including reference of method used. The source and description of the fill material to be used. A written summary is required.

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3.11 Water Balance Calculation

A yearly Hydrologic Budget or Water Balance Calculation for pre- and post-development conditions on the site including annual precipitation, evapotranspiration, runoff, recharge, septic flow.

3.12 Hydrogeologic Assessment

A hydrogeologic assessment for pre- and post development conditions including a seasonal profile of groundwater elevation, the velocity and the direction of ground and surface water flow.

3.13 Use description

Description of existing and proposed use(s). Such description shall be detailed and specific, yet understandable by a lay person. Include information on maximum number of employees, daily activities, unusual activities, handling and storage of hazardous materials or waste.

3.14 Emergency Response Plan

A complete Emergency Response Plan with profile of events that could adversely affect the groundwater or surface water. Location of emergency response equipment stored on site and

list of equipment. Plan to educate employees on the general concept of stormwater management and groundwater protection, and to train employees for the specific events expected to be incurred during an emergency situation on the site.

3.15 LID Management Plan Contents

The application for a LID Special Permit shall include the submittal of a LID Management Plan to the Planning Board. This LID Management Plan shall contain sufficient information for the Planning Board to evaluate the environmental impact, effectiveness, and acceptability of the measures that meet the LID site design principles stated below. This plan shall be in accordance with the criteria established in these Rules and must be submitted with the stamp and signature of a Professional Engineer (PE) licensed in the Commonwealth of Massachusetts. The LID Management Plan shall fully describe the project in drawings, narrative, and calculations.

LID site design principles:

- (a) Preservation of the site's natural features and environmentally sensitive areas such as wetlands, native vegetation, mature trees, slopes, drainageways, permeable soils, flood plains, woodlands and soils to the greatest extent possible;
- (b) Minimization of grading and clearing;
- (c) Clustering of buildings;
- (d) Use of stormwater management components that provide filtration, treatment and infiltration such as vegetated areas that slow down runoff; maximizing infiltration and reducing contact with paved surfaces;
- (e) Creation of subwatersheds to treat and manage runoff in smaller, decentralized, low-tech stormwater management techniques to treat and recharge stormwater close to the source;
- (f) Emphasis of simple, nonstructural, low-tech, low-cost methods including open drainage systems, disconnection of roof runoff, and street sweeping;
- (g) Reduction of impervious surfaces wherever possible through alternative street design, such as omission of curbs and use of narrower streets, shared driveways and through the use of shared parking areas;
- (h) Reduction of any heat island effect;
- (i) Use of native plant vegetation (invasive species prohibited) in buffer strips and in rain gardens (small planted depressions that can trap and filter runoff). Naturalized, non-invasive plant species may be substituted for native plant vegetation subject to the Board's approval.
- (j) Techniques integrated into every aspect of site design to create a hydrologically functional lot or site, including the following:
 - i. Vegetated open channel systems along roads;
 - ii. Rain gardens;
 - iii. Buffer strips;
 - iv. Use of roof gardens where practicable;
 - v. Use of amended soils that will store, filter and infiltrate runoff;
 - vi. Bioretention areas;
 - vii. Use of rain barrels and other cisterns to provide additional stormwater storage;
 - viii. Use of permeable pavement.

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3.15.1 The LID Management Plan shall include:

- a) Contact Information. The name, address, and telephone number of all persons having a legal interest in the property and the tax reference number and parcel number of the property or properties affected;
- b) A locus map;
- c) The existing zoning, and land use at the site;

- d) The proposed land use;
- e) The location(s) of existing and proposed easements;
- f) The location of existing and proposed utilities;
- g) The site planning process shall be documented and shall include the following steps:
 - i. Identify and map critical environmental resources;
 - ii. Delineate potential building envelopes avoiding environmental resource areas and appropriate buffers; and
 - iii. Develop methods to minimize impervious surfaces, and to protect and preserve open space.
- h) The site's existing & proposed topography with contours at 2 foot intervals;
- i) The existing site hydrology (both groundwater recharge and surface runoff);
- j) A description & delineation of existing drinking water resource areas, stormwater conveyances, impoundments, and wetlands or other critical environmental resource areas on or adjacent to the site or into which stormwater flows;
- k) A delineation of 100-year flood plains, if applicable;
- l) Estimated seasonal high groundwater elevation in areas to be used for stormwater retention, detention, or infiltration;
- m) The existing and proposed vegetation and ground surfaces with runoff coefficients for each;
- n) A drainage area map showing pre and post construction watershed boundaries, drainage area and stormwater flow paths, including municipal drainage system flows;
- o) A recharge area analysis that calculates pre-and post-project annual groundwater recharge rates on the parcel;
- p) A description and drawings of all components of the proposed LID Management system including:
 - i. Locations, cross sections, and profiles of all brooks, streams, drainage swales and their method of stabilization;

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- ii. All measures for the detention, retention or infiltration of water;
 - iii. All measures for the protection of water quality;
 - iv. The structural details for all components of the proposed drainage systems and LID Management facilities;
 - v. Notes on drawings specifying materials to be used, construction specifications, and expected hydrology with supporting calculations;
 - vi. Proposed improvements including location of buildings or other structures, impervious surfaces, and drainage facilities, if applicable;
 - vii. Any other information requested by the Planning Board.
- q) Hydrologic and hydraulic design calculations for the pre-development and post-development conditions for the design storms specified in these Rules. Such calculations shall include:
 - i. Description of the design storm frequency, intensity and duration;
 - ii. Time of concentration;
 - iii. Soil Runoff Curve Number (RCN) based on land use and soil hydrologic group;
 - iv. Peak runoff rates and total runoff volumes for each watershed area;
 - v. Information on construction measures used to maintain the infiltration capacity of the soil where any kind of infiltration is proposed;
 - vi. Infiltration rates, where applicable;
 - vii. Culvert capacities;
 - viii. Flow velocities;
 - ix. Data on the increase in rate and volume of runoff for the specified design storms, and
 - x. Documentation of sources for all computation methods and field test results.
- r) Post-Development downstream analysis if deemed necessary by the Planning Board;
- s) Soils Information from test pits performed at the location of proposed LID practices and techniques, when applicable, including but not limited to soil descriptions, depth to seasonal high groundwater, depth to bedrock, and percolation rates. Soils information will be based on site test pits logged by a Massachusetts Registered Soil Evaluator, or a

Massachusetts Registered Professional Engineer;

- t) Landscaping plan describing the woody and herbaceous vegetative stabilization and management techniques to be used within and adjacent to the stormwater practice.

3.16 Operation and Maintenance Plan Contents

An Operation and Maintenance plan (O&M Plan) is required at the time of application for all projects. The maintenance plan shall be designed to ensure compliance with the Permit, this Bylaw and that the Massachusetts Surface Water Quality Standards, 314, CMR 4.00 are met in all seasons and throughout the life of the system. The Operation and Maintenance Plan shall remain on file with the Planning Board and shall be an ongoing requirement.

3.16.1 The O&M Plan shall include:

- a) The name(s) of the owner(s) for all components of the system;
- b) A map showing the location of the systems and facilities including catch basins, manholes/access lids, main, and stormwater devices;
- c) Maintenance agreements that specify:
 - i. The names and addresses of the person(s) responsible for operation and maintenance;
 - ii. The person(s) responsible for financing maintenance and emergency repairs;
 - iii. An Inspection and Maintenance Schedule for all LID practices and techniques including routine and non-routine maintenance tasks to be performed;
 - iv. A list of easements with the purpose and location of each;
 - v. The signature(s) of the owner(s).
- d) LID and/or Stormwater Management Easement(s) - Easements shall be provided by the property owner(s) as necessary for:
 - i. Access for facility inspections and maintenance;
 - ii. Preservation of stormwater runoff conveyance, infiltration, and detention areas and facilities, including flood routes for the 100-year storm event;
 - iii. Direct maintenance access by heavy equipment to structures requiring regular maintenance.
 - (1) The purpose of each easement shall be specified in the maintenance agreement signed by the property owner.
 - (2) Stormwater management easements are required for all areas used for off-site stormwater control, unless a waiver is granted by the Planning Board.
 - (3) Easements shall be recorded with the Middlesex County Registry of Deeds.

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3.16.2 Changes to Operation and Maintenance Plans

- a) The owner(s) of the stormwater management system must notify the Planning Board of changes in ownership or assignment of financial responsibility.
- b) The maintenance schedule in the Maintenance Agreement may be amended to achieve the purposes of these Rules and the LID Bylaw by mutual agreement of the Planning Board and the Responsible Parties. Amendments must be in writing and signed by all Responsible Parties. Responsible Parties shall include owner(s), persons with financial responsibility, and persons with operational responsibility.

SECTION 4. PUBLIC HEARING & DECISION

4.1 Public Hearing Notice

The Board shall set the date, time, and place of the public hearing, which shall be held within 65 days of the application filing date.

- 4.1.1 A notice of the hearing, prepared by the Planning office, indicating the date, time, place, and purpose of the hearing shall be sent certified mail by the Applicant to the Parties In Interest at least fourteen (14) days prior to the date of the public hearing.
- 4.1.2 A notice of the hearing shall also be submitted by the Planning Office to the "Metrowest Daily News" newspaper or other newspaper designated by the Board once in each of two successive weeks, the first publication to be not less than fourteen (14) days before the day of the hearing.
- 4.1.3 The Applicant shall present to the office of the Board, the Thursday prior to the start of the public hearing, the certified mail return receipts as evidence that all Parties In

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Interest have been notified as required by law.

- 4.1.4 Failure to properly notify Parties In Interest and to publish a notice of the hearing could render the public hearing invalid and could cause serious delays in the processing of the Application.

4.2 Withdrawal of Application

Any application for a Permit submitted hereunder may be withdrawn without prejudice by notice in writing to the Board prior to the notice of a public hearing being posted or mailed pursuant to these Rules. Withdrawal of any application thereafter requires Board approval. No refund of fees will be provided if an application is withdrawn.

4.3 Time Period for Deliberation

The Board will act on each application for a Permit within ninety (90) days after the close of the public hearing, unless such application has been withdrawn from consideration as set forth above.

- 4.3.1 Continuation & Extension - The period within which final action shall be taken may be extended for a defined period by written agreement between the Board and the Applicant. In the event that the Board determines that the application is inadequate for the Board to make a finding, the Board may, at its discretion, continue the hearing to a later date to permit the Applicant to submit a revised application.

4.4 Decision

The concurring vote of four (4) of the five (5) members of the Board shall be necessary to decide in favor of granting a Permit.

The Board will file its Decision with the Town Clerk and send a copy to the Applicant by certified mail. The Board shall also send a notice of its Decision to the property owner, to other Town boards and departments, to Parties In Interest, and to those who have requested such notice at the public hearing.

4.5 Submission of Approved Plans, Endorsement

The approved plan as amended by the Board in its Decision of approval shall be submitted for endorsement to the office of the Board, following the instructions for Endorsement and Recording of an Approved Plan in the Southborough Subdivision Rules and Regulations whether the LID is a Subdivision or not. Prior to the issuance of a Building Permit, two copies of the approved and endorsed plans shall be submitted to the Building Commissioner.

4.6 Recording of Decision

The recording of a Decision is required by The Zoning Act and the Bylaw. The Applicant shall be responsible for recording a full copy of the Decision in the Middlesex South District Registry of Deeds in Cambridge or the Land Court and for paying any required recording fees. A copy of the recorded Decision, certified by the Registry of Deeds, must be submitted to the Board and the Building Inspector prior to issuance of a Building Permit or the start of any work.

4.7 Appeal of Decision

Any person aggrieved by a Decision of the Board, whether or not previously a party to the proceeding, may appeal such Decision in accordance with M.G.L., Chapter 40A, Section 17 within 20 days after the filing of the Decision with the Office of the Town Clerk.

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4.8 Time Limit for Permit

Any LID Special Permit granted by the Board shall lapse within one year from the date of filing of the Board's Decision with the Office of the Town Clerk, unless otherwise specified by the Board in the Special Permit, or unless substantial use or construction under the Permit has begun, except for good cause, or if the Board has specified a shorter time period in the Decision. The applicant shall be granted a single one-year extension, unless otherwise specified by the Board, by applying to the Board, in writing at least 30 days prior to the date when the Permit is due to lapse. Failure to submit such a request as prescribed above shall be due cause for the Board to deny the requested time extension. If the actions permitted are not exercised or the approval not extended, they shall lapse, and a new application and hearing will be required.

4.9 Limitation of the Decision

The granting of a Special Permit constitutes approval only under the pertinent sections of the Bylaw. Other permits or approvals required by other governmental boards, agencies, or bodies having jurisdiction such as the Board of Health, and Conservation Commission shall not be assumed or implied. The Board may condition any Special Permit hereunder on satisfactory demonstration of compliance with the requirements of other governmental bodies having jurisdiction prior to the start of any work on the site, the issuance of a Building Permit, or any other appropriate step in the development process. The Applicant is hereby encouraged to seek approvals and certificates of compliance from such other governmental bodies prior to or concurrently with the application to the Board.

4.10 Repetitive Petition

Pursuant to M.G.L. Chapter 40A, Sect. 16, no Application which has been unfavorably and finally acted upon by the Board shall be acted favorably upon within two years after the date of final unfavorable action unless four members of the Board vote to find that specific and material changes in the conditions upon which the previous unfavorable action was based have occurred and describe such changes in the records of the Board's proceedings, and all but one member of the Board consents to the consideration of the matter. Notice to Parties in Interest shall be given by the Applicant of the time and place of the proceedings at which the question of consent will be considered.

4.11 Amending a LID Special Permit

A previously granted Special Permit may be amended by written request to the Board or on the Board's own motion. The Board shall determine whether any request for further alterations to a site constitutes a minor amendment or if such request should be considered a new application requiring a public hearing. The Board may amend a Special Permit without a new public hearing provided it finds that the amendment is not significant to the public interest and is consistent with the purpose and intent of the Bylaw. Consultation with the Building Department is recommended prior to the filing of any request to amend a Special Permit. The fee for minor amendments shall be as listed on the Fee Schedule.

SECTION 5. INSPECTIONS AND MAINTENANCE

5.1 Notice of Construction Commencement

The Applicant must notify the Planning Board in advance before the commencement of construction. In addition, the Applicant must notify the Planning Board in advance of construction of critical components of the LID management system.

- 5.1.1. At the discretion of the Planning Board, periodic inspections of the LID management system construction shall be conducted by the Board, the Town Planner, and/or a professional engineer or their designee who has been approved by the Planning Board. All inspections shall be documented and written reports prepared that contain the following information:
 - a) The date and location of the inspection;
 - b) Whether construction is in compliance with the approved LID management plan;
 - c) Variations from the approved construction specifications; and
 - d) Any other variations or violations of the conditions of the approved stormwater management plan.
- 5.1.2 The Planning Board or its designee shall inspect the project site at the following stages, at a minimum:
 - a) Initial Site Inspection: prior to approval of any plan;
 - b) LID Inspections: An inspection will be made during the course of construction of LID techniques or practices, and of the completed LID management system, prior to backfilling of any underground drainage or stormwater conveyance structures.
- 5.1.3 Final Inspection
 - a) After the LID techniques and practices have been constructed and before the surety has been released, all Applicants are required to submit actual "as built" plans for any LID techniques and practices after final construction is completed and must be certified by a Professional Engineer.
 - b) The Planning Board shall inspect, or cause to be inspected, the system to confirm its "as-built" features. This inspection shall also evaluate the effectiveness of the system in an actual storm. If the inspector finds the system to be adequate he/she shall so report to the Planning Board. As built plans shall be full size plans which reflect the "as built" conditions, including all final grades, developed by a Professional Engineer. All changes to project design should be recorded in red ink on plans to define changes made. All work deleted, corrections in elevations, and changes in materials, should be shown on the as built drawings.
- 5.1.4 Inadequacy of System
 - a) If the system is found to be inadequate by virtue of physical evidence of operational failure, even though it was built as called for in the LID Management Plan, it shall be corrected by the Applicant immediately. If the Applicant fails to act, the Planning Board may use the surety bond to complete the work.
 - b) If the Planning Board determines that there is a failure to comply with the plan, the property owner shall be notified in writing of the nature of the violation and the required corrective actions. A Stop Work Order shall be issued until any violations are corrected and all work previously completed has received approval by the Planning Board.

5.2 Perpetual Inspection and Maintenance

- 5.2.1 Maintenance Responsibility
 - a) LID techniques and practices included in a LID management plan with an inspection and maintenance agreement in accordance with these Rules must undergo ongoing inspections to document maintenance and repair needs and ensure compliance with

the requirements of the agreement, the plan and these Rules.

- b) The owner of the property on which work has been done pursuant to this Regulation for private LID techniques and practices, or any other person or agent in control of such property, shall maintain in good condition and promptly repair and restore all grade surfaces, walls, drains, dams and structures, vegetation, erosion and sedimentation controls, and other protective devices. Such repairs or restoration and maintenance shall be in accordance with approved plans.

5.2.2 Maintenance Inspections

- a) All LID techniques and practices must undergo inspections to document maintenance and repair needs and ensure compliance with the requirements of this bylaw and accomplishment of its purposes as specified in the Operation and Maintenance Plan and Maintenance Agreement described in these Rules.
- b) At a minimum, inspections shall occur during the first year of operation and at least once every [three] years thereafter. In addition, a maintenance agreement, as specified in these Rules between the owner and the Planning Board, shall be executed for privately-owned LID techniques and practices that specifies the Responsible Party for conducting long term inspections.

5.2.3 Right-of-Entry for Inspection

The terms of the inspection and maintenance agreement as specified in these Rules shall provide for the Planning Board or its designees to enter the property at reasonable times and in a reasonable manner for the purpose of inspection. The Planning Board, its agents, officers, and employees shall have authority to enter upon privately owned land for the purpose of performing their duties under this Regulation and may make or cause to be made such examinations, surveys, or sampling as the Planning Board deems necessary, subject to the constitutions and laws of the United States and the Commonwealth.

5.2.4 Records of Maintenance and Repair Activities

Parties responsible for the operation and maintenance of LID techniques and practices shall provide records of all maintenance and repairs to the Planning Board, upon request. Parties responsible for the operation and maintenance of LID techniques and practices shall make records of the installation and of all maintenance and repairs, and shall retain the records for at least 5 years. These records shall be made available to the Planning Board during inspection of the facility and at other reasonable times upon request.

5.2.5 Failure to Maintain

- a) If a responsible person fails or refuses to meet the requirements of the inspection and maintenance agreement, the Planning Board, after thirty (30) days written notice (except, that in the event the violation constitutes an immediate danger to public health or public safety, 24 hours notice shall be sufficient), may correct a violation of the design standards or maintenance requirements by performing the necessary work

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to place the facility or practice in proper working condition. The Town of Southborough may assess the owner(s) of the facility for the cost of repair work which shall be a lien on the property.

- b) After notification is provided to the person responsible for carrying out the maintenance plan of any deficiencies discovered from an inspection of LID techniques and practices, the person responsible for carrying out the maintenance plan shall have 30 days or other time frame mutually agreed to between the Planning Board and the person responsible for carrying out the maintenance plan to correct the deficiencies. The Planning Board shall then conduct a subsequent inspection to ensure completion of repairs.

SECTION 6 ENFORCEMENT

The Planning Board or an authorized agent of the Planning Board shall enforce the LID Bylaw, Rules, violation notices, and enforcement orders, and may pursue all civil, criminal and non-criminal remedies for such violations.

SECTION 7 SEVERABILITY

The invalidity of any section, provision, paragraph, sentence, or clause of these Rules shall not invalidate any section, provision, paragraph, sentence, or clause thereof, nor shall it invalidate any Special Permit or determination that previously has been issued.

B. Development Impact Statement

The Development Impact Statement (DIS) is intended to serve as a guide to the Applicant in formulating the development proposal, as well as a guide to the Planning Board in its evaluation of the proposed development in the context of existing conditions and planning efforts by the Town.

The DIS seeks to raise the broad range of issues generally associated with development plans in a form and in a language that is understandable to a layperson. It assesses development impacts which could be avoided or mitigated if recognized early in the development process. Other portions of the DIS request information which will help the Town plan ahead and ensure adequate services in the future. It is the hope of the Planning Board that the use of the DIS, along with early consultations with the Town staff and the Applicant's continuing cooperation throughout the development process, will foster a development of excellent quality and design

sensitive to Southborough's natural and historic heritage and other community concerns.

The DIS shall be filed with an application for a LID Special Permit. The DIS shall clearly and methodically assess the relationship of the proposed development to the natural, physical, and social environment. In preparing the DIS, professionals of the respective fields shall be consulted and a systematic, interdisciplinary approach shall be utilized which will ensure the integrated use of the natural and social sciences and the environmental design arts in planning, designing and engineering of the proposed project.

Development Impact Statement

Please type or print information in blanks below.

1. Name of Proposed Development _____
2. Location _____
3. Name of Applicant(s) _____
4. Brief Description of the Proposed Project _____
5. Name of Individual Preparing this DIS _____
Firm/Company _____
Address _____ Business Phone _____

6. Professional
Credentials _____

A. Site Description

7. Present permitted and actual land uses by percentage of the site.

<i>Uses</i>	<i>Percentage</i>
Industrial	
Commercial	
Residential	
Forest	
Agricultural	
Other (specify)	

8. Total acreage on the site: _____ acres.

Approximate Acreage	At Present	After Completion
Meadow or Brushland (non agriculture)		
Forested		
Agricultural (includes orchards, cropland, pasture)		
Wetland		
Water Surface Area		
Flood Plain		
Unvegetated (rock, earth, or fill)		
Roads, buildings and other impervious surfaces		

Protected Open Space		
Other (indicate type)		

9. List the zoning districts in which the site is located and indicate the percentage of the site in each district. *Note: be sure to include overlay zoning*

districts.

<i>District</i>	<i>Percentage</i>

10. Predominant soil type(s) on the site: _____

Soil drainage (Use the US Soil Conservation Service's definition)

<i>Soil Type</i>	<i>% of the Site</i>
Well drained	
Moderately well drained	
Poorly drained	

11. Are there bedrock outcroppings on the site? ____yes ____no

12. Approximate percentage of proposed site with slopes between:

<i>Slope</i>	<i>% of the Site</i>
0 - 10%	
10 - 15%	
greater than 15%	

13. How close is the site to a public well? Zone(s) ____ Proximity to a public well: ____ feet

14. Does the project site contain any species of plant or animal life that is identified as rare or endangered? (Consult with the Massachusetts National Heritage Program and the Planning Board staff). ____yes ____no

If yes, specify:

15. Are there any unusual or unique features on the site such as trees larger than 30 inches D.B.H., historic stone walls, bogs, kettle ponds, eskers, drumlins, quarries, distinctive rock formation or granite bridges? ____yes ____no

If yes, specify: _____

16. Are there any established foot paths running through the site or railroad right of ways?

____yes ____no If yes, specify:_____

17. Is the site presently used by the community or neighborhood as an open space or recreation area? ____yes ____no

Is the site adjacent to conservation land or a recreation area? ____yes ____no

If yes, specify:_____

18. Does the site include scenic views or will the proposed development cause any scenic vistas to be obstructed from view? ____yes ____no

If yes, specify:_____

19. Are there wetlands, lakes, ponds, streams, or rivers within or contiguous to the site?

____yes ____no

If yes, specify:_____

20. Is there any farmland or forest land on the site protected under Chapter 61A or 61B of the Massachusetts General Laws? ____yes ____no

If yes, specify:_____

21. Has the site ever been used for the disposal of hazardous waste? Has a 21E Study been conducted for the site? ____yes ____no

If yes, specify results:_____

22. Will the proposed activity require use and/or storage of hazardous materials, or generation of hazardous waste? ____yes ____no

If yes, specify_____

23. Does the project contain any buildings or sites of historic or archaeological significance? (Consult with the Southborough Historic Board or the Historical Society.)

____yes____ no

If yes, please describe:

24. Is the project contiguous to or does it contain a building in a local historic district or national register district? ____yes____ no

B. Circulation System

25. What is the average weekday traffic and peak hour traffic volumes generated by the

proposed project?

	Current	Post-construction
Average weekday traffic		
Average peak hour volumes morning		
Average peak hour volumes evening		

26. Existing street(s) providing access to proposed development:

Name _____ Town Classification _____

27. Existing intersection(s): list intersections located within 1000 feet of any access to the proposed development:

Name of ways

28. Location of existing sidewalks within 1000 feet of the proposed site?

29. Location of proposed sidewalks and their connection to existing sidewalks:

30. Are there parcels of undeveloped land adjacent to the proposed site? ___yes ___no

Will access to these undeveloped parcels be provided within the proposed site?

___yes___no If yes, please describe_____

If no, please explain why

C. Utilities and Municipal Services

31. If dwelling units are to be constructed, what is the total number of bedrooms proposed?

32. If the proposed use of the site is nonresidential, what will the site be specifically used for and how many feet of gross floor area will be constructed?

33. Storm Drainage

a. Describe nature, location and surface water body receiving current surface water of the site: _____

b. Describe the proposed storm drainage system and how it will be altered by the proposed development:_____

c, Will a NPDES (National Pollution Discharge Elimination System) Permit be required?

____yes ____no

d. Is the Site subject to the Stormwater Management Policy of the Department of Environmental Protection? ____yes ____no

a) Sewage Disposal - Describe nature of sewage disposal service proposed for the site.

If a tertiary treatment facility is proposed, will it have any excess capacity?

____yes ____no

D. Measures to Mitigate Impacts

Attach brief descriptions of the measures that will be taken to:

- 34. Prevent surface water contamination.
- 35. Prevent groundwater contamination.
- 36. Maximize groundwater recharge.
- 37. Maintain natural flow paths, use open drainage
- 38. Create subwatersheds and “micromanage” runoff in a treatment train of small structures.
- 39. Prevent erosion and sedimentation.
- 40. Maintain slope stability.
- 41. Preserve wildlife habitat.
- 42. Preserve wetlands.
- 43. Control peak runoff from the site so that the post-development rate of runoff will be no greater than the predevelopment rate of runoff.
- 44. Use of ecological landscape.
- 45. Minimize impervious surfaces.

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- 46. Preserve historically significant structures and features on the site.

Please use layman’s terms where possible while still being accurate and comprehensive.

Where appropriate, graphics shall be used. List sources of data, reference materials, and methodology used to determine all conclusions. Use additional sheets as necessary.

