

Wonk Spring Partnership LLC
Industrial Subdivision
Southington, Connecticut



King's Mark
Environmental Review Team
Report

King's Mark Resource Conservation & Development Area, Inc.

**Wonk spring Partnership LLC
Industrial Subdivision
Southington, Connecticut**



Environmental Review Team Report

**Prepared by the King's Mark Environmental Review Team
of the King's Mark Resource Conservation & Development Area, Inc.**

**For the
Inland Wetlands and Watercourses Agency
Southington, Connecticut**

September 2013

Report #362

Acknowledgments

This report is an outgrowth of a request from the Southington Inland Wetlands and Watercourses Agency to the Southwest Conservation District (NWCD) and the King's Mark Resource Conservation and Development Area (RC&D) Council/ERT Subcommittee for their consideration and approval. The request was approved and the measure reviewed by the King's Mark Environmental Review Team (ERT).

The King's Mark Environmental Review Team Coordinator, Elaine Sych, would like to thank and gratefully acknowledge the following Team members whose professionalism and expertise were invaluable to the completion of this report.

The field reviews took place on Thursday, August 1 and Wednesday, August 7, 2013.

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Roman Mrozinski	District Director Southwest Conservation District 203-287-8179
Francis Pickering	Deputy Director Central Connecticut Regional Planning Agency 860-589-7820 Ext. 200
Charlotte Pyle	Landscape Ecologist USDA-NRCS 860-871-4066
Neal Williams	Environmental Analyst III CTDEEP Stormwater Management 860-424-3356

I would also like to thank Theresa Albanese, Southington IWWC and CC, David Lavallee, Acting Town Planner, Robert Rogers, applicant, Bryan Meccariello, attorney for applicant, Stephen Giudice and Gwen Williamson, engineers for the applicant, Tom Pietres, soil scientist for the applicant, Jennifer Beno, wetland biologist for the applicant, Frank Punzo, homeowner, George Logan and Sigrun Gadwa, ecological consultants for the homeowner, for their cooperation and assistance during this environmental review.

Prior to the review day, each Team member received a summary of the proposed project with location and aerial photos. During the field review Team members received additional information. Some team members made additional or separate site visits. Reports from each

Team member were submitted to the ERT coordinator for compilation and editing into this final report.

This report represents the Team's findings. It is not meant to compete with private consultants by providing site plans or detailed solutions to development problems. The Team does not recommend what final action should be taken on a proposed project - all final decisions rest with the Town and landowner. This report identifies the existing resource base and evaluates its significance to the proposed use, and also suggests considerations that should be of concern to the town. The results of this Team action are oriented toward the development of better environmental quality and the long term economics of land use.

The Kings Mark RC&D Executive Council hopes you will find this report of value and assistance in reviewing this proposed industrial subdivision.

If you require additional information please contact:

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Introduction

Introduction

The Southington Inland Wetlands and Watercourses Agency has requested Environmental Review Team (ERT) assistance in reviewing a proposed industrial subdivision.

The +/-33 acre project parcel is located south of Wonx Spring Road in the southeast portion of town. The site is accessed from an existing driveway that served a large factory. The central portion of the site formerly contained a factory building and parking lot that have been removed. Due to the previous tenants a portion of the site is subject to environmental land use restrictions which were established in 2010 due to contamination. The central portion of the site is now a meadow and remainder is wooded, relatively flat with some wetland areas. The surrounding land uses include Interstate I-84, a small industrial park, and residential use.

The proposed plan will construct a cul-de-sac road with nine (9) industrial lots. Public water and sewer will serve the site. Lots will be developed individually as purchased. One detention basin is proposed. There is proposed disturbance of +/- 2500 sq. ft. of wetlands for the proposed roadway and associated stormwater management system.

Objectives of the ERT Study

The town is requesting assistance from the ERT to provide a review of the stormwater management system including erosion and sediment controls, wetland and wildlife impacts, traffic analysis and site design along with a review of public hearing documents submitted.

The ERT Process

Through the efforts of the Southington Inland Wetlands and Watercourses Commission this environmental review and report was prepared for the Town of Southington.

This report provides an information base and a series of recommendations and guidelines which cover some of the issues of concern to the town. Team members were able to review maps, plans and supporting documentation provided by the town and the applicant.

The review process consisted of four phases:

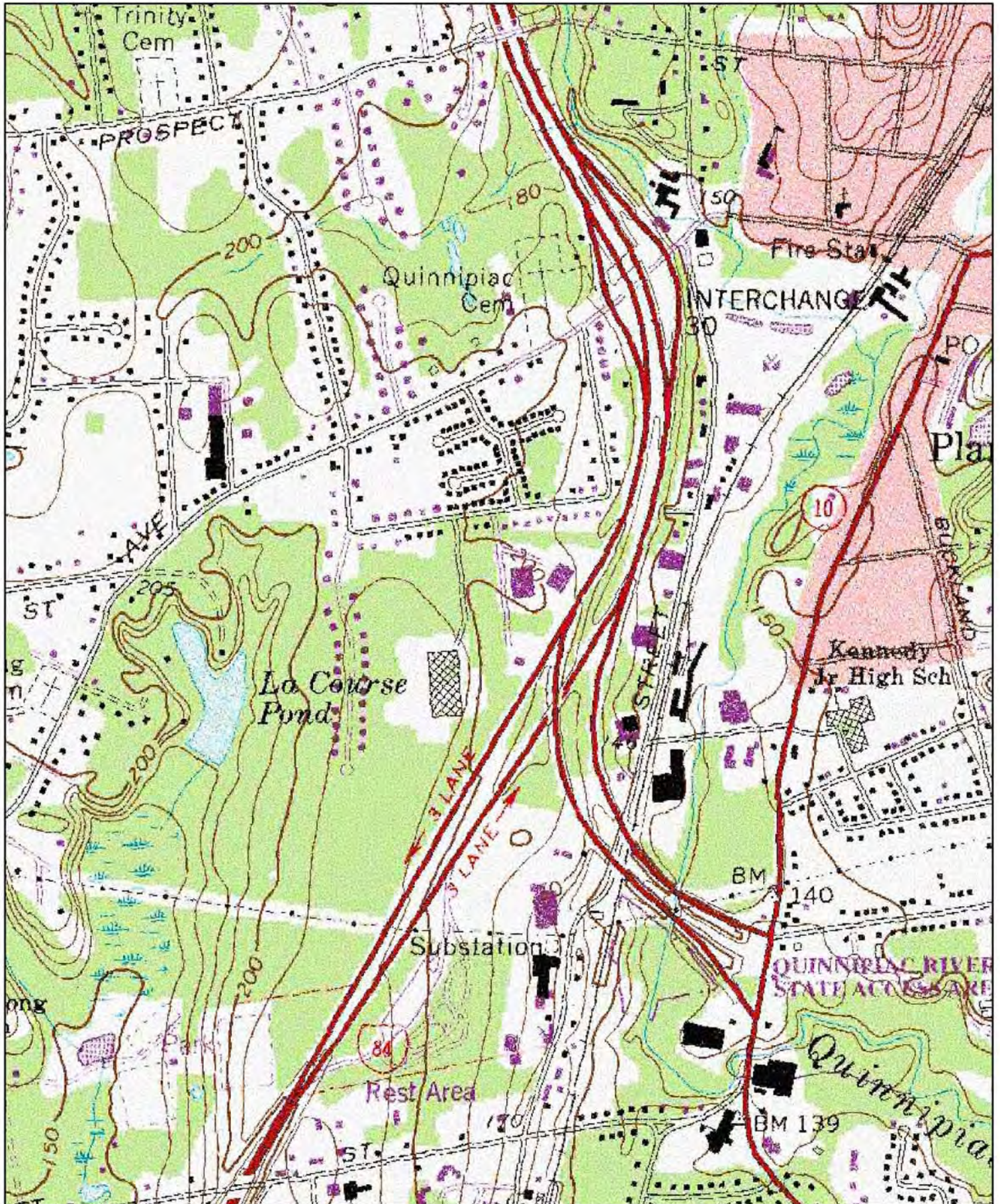
1. Inventory of the site's natural resources;
2. Assessment of these resources;
3. Identification of resource areas and review of plans; and
4. Presentation of education, management and land use guidelines.

The data collection phase involved both literature and field research. The field reviews were conducted Thursday, August 1 and Wednesday, August 7, 2013. The emphasis of the field review was on the exchange of ideas, concerns and recommendations. Being on site allowed Team members to verify information and to identify other resources.

Once Team members had assimilated an adequate data base, they were able to analyze and interpret their findings. Individual Team members then prepared and submitted their reports to the ERT coordinator for compilation into this final ERT report.

Wonx Spring Road Industrial Subdivision

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The Connecticut Environmental
Review Team



This map was prepared by Amanda Fargo-Johnson for
the Connecticut Environmental Review Team.
This map is for educational use only.
It contains no authoritative data.
July 2013.

Southington, CT

0 305 610 1,220 1,830
Feet



Wonx Spring Road Industrial Subdivision

9



The Connecticut Environmental
Review Team



This map was prepared by Amanda Fargo-Johnson for
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July 2013.

Southington, CT

0 200 400 800 1,200
Feet



Wonx Spring Road Industrial Subdivision

10



The Connecticut Environmental
Review Team



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July 2013.

Southington, CT

0 195 390 780 1,170
Feet



Conservation District Review

Site Resources

This report applies to the 32-acre brownfield, industrial site, which is bounded by Wonx Spring Road to the north, Roxbury Road to its western boundary, Town of Southington Conservation Easement to the south and Metals Drive and I-84 West along its eastern boundary. The parcel is located within the Quinnipiac River Watershed. The resource information in this report is based on the historical soils series descriptions and the new digital mapping unit descriptions as presented in the Soil Survey of Connecticut, remote survey interpretations plus field observations. The report addresses issues on past industrial land uses, proposed reutilization plans and their potential impacts to sensitive environments that have developed over several years of remediation from volatile organic chemical contamination and heavy metals.

CT Soils Mapping was provided in the site review packet. They were derived from the digital survey (Soil Survey of Connecticut). The soil survey utilizes recent aerial photographic base with one soil legend, which employs the numbering convention used by the USDA.

Plan Proposal / Review

Based on the current level of site plan layout details, it is difficult to fully qualify and quantify the impacts to the on-site hydrologic regimes, critical habitats and water quality concerns from future development projects that are nominally sited on the field of the drawings.

At a minimum, each of the 9 proposed industrial lots should indicate the maximum foot print of site disturbance by exhibiting the Limit of Disturbance (LOD), which will include any facility grading limits, set back delineations, intended encroachments and additional filling of wetlands plus provide a general sizing, function, location and direction of runoff discharges from any proposed detention areas. Suffice it to say that, a non-descript oval indicating that it is intended for “on-site detention” with no additional siting considerations on raw water treatment, recharge or infiltration would be considered inadequate.

Mapping Units

Wetland Soils – Mapping

1) USDA Soil #5 - Ws - Wilbraham very stony silt loam

The Ws map unit consists primarily of nearly level Wilbraham soils. They are very deep, poorly drained soils that formed in compact glacial till, derived mainly from red Triassic rocks and some basalt. Typically, they have a friable silt loam or loam surface layer and subsoil over a silt loam, loam or fine sandy loam dense till substratum. Wilbraham soils have a perched watertable within 1.5 feet of the surface much of the year.

Wilbraham soils have a high watertable at a depth of about 6 inches from late fall until mid-spring and a slowly permeable substratum.

2) USDA Soil # 13 – Wa – Walpole sandy loam. Slopes 0 to 3 percent.

Walpole soils are nearly level, poorly drained soils that formed in depressions on broad outwash terraces. Typically, they have a fine sandy loam or sandy loam surface layer and subsoil over a substratum of stratified loamy sand and gravel. Walpole soils have a watertable within 1 foot of the surface from late fall to late spring.

Observation

The aforementioned soil types are located within the northern portion of the site, where the surface water runoff and hydrologic regime trends from west to east throughout the site. These soil units comprise the make-up of the largest wetlands on site, which are Wetland #6 (west side of service road) and #11 (east side of roadway). They are hydraulically linked by a single RCP conveyance under the existing roadway. According to the documents provided, the wetland to the east (#11) is identified as a vernal pool habitat and wetland #6 is a potential vernal pool. Wetland disturbances associated to the proposed project indicate that there would be a total disturbance or filling of 2,460 sq/ft of the wetlands.

Concerns

- **Filling of Wetlands – Discrepancies in square feet of wetland losses.**

Site Plans - Proposed filling of 2,460 sq/ft of wetlands per Sheet GR1 of the Site Plan by Cole Engineering and Surveying, LLC.

Environmental Assessment Report – Soil Sciences and Environmental Services report page 21, section on Direct Impacts

Page 21, paragraph 1 - According to the plans, there will be 3,185 square feet of direct impacts to wetlands etc. These documents run contrary to each other.

Page 21, paragraph 1 – “In addition Area 2, the man-made drainage ditch will be piped and filled.” This “man-made drainage ditch”, “swale”, “intermittent watercourse” whether artificial or natural has developed wetland soils over time. On average, the bottom of this feature is 7-feet wide by a scaled length of approx, 400-feet would equal to an additional 2,800 square feet of filling of wetlands and an intermittent watercourse.

Note:

Based on these concerns, the lack of definable limits of disturbance and potential encroachment or filling for each of the 9 proposed industrial lots will in all probability be greater than indicated in these reports and drawings.

- **Loss of Wetlands / Wetland Function**

Site Development - The increase in impervious surfaces from the proposed 9 industrial lots and the interruption of drainage patterns from the proposed upland development would alter the hydrologic regime, adversely impact runoff water quality.

Wetland #11 - There has been a previous attempt to dewater this wetland with a shallow excavation across this wetland that trends west to east then discharges to a ditch along the parcels eastern boundary and Metals Drive. This feature does not appear on the field of the drawing.

- **Vernal Pools – Verification / Set-back Distances / Upland Disturbance Effect**

Wetland #11 – This wetland was identified as having a confirmed vernal pool, which was encircled by a 200-foot set-back zone indicated on the field of the drawing on Sheet 2 – Existing Condition and Sheet GR1.

Wetland #6 – Verification - On page 13 of the Soil Science and Environmental Services report, indicated that there appears to be vernal pool behind the existing housing development. The report is incomplete and should verify whether or not the pool and surrounding habitat is a vernal pool worthy of further consideration to protect and preserve the wetlands flora and fauna.

Note:

Several well known reports regarding vernal pool aquatic and terrestrial requirements for continued viability; indicate that encroachments on more than one-fourth of a vernal pools perimeter and upland habitat loss will result in the decline of obligate species populations. This stressor coupled with this proposals intended, extensive development, destruction of a majority of the upland habitat will ultimately result in the complete loss of the vernal pools and its inhabitants.

- **Wetland Encroachment within the 50' Setback** – The following proposed building lots, roadways, support facilities and associated landscaping create land disturbances within the 50' setback. Lots # 1, 2, 6, 7 & 8.

Erosion and Sedimentation Control Measures

The measures proposed for this sites first phase of construction activities is adequate to control the proposed disturbances on site. However, the plans do not minimally address the limits of disturbance of each proposed industrial lot. *Regardless of the phasing of the construction activities, this site plan should be more comprehensive in its approach to the development of the entire site.*

Stormwater Management

The standard configuration of the Detention Basin is adequately sized for the limited activity for the initial phase of this project. The basin has been lined to separate the basin water from the groundwater with the intent to minimize the potential movement of residual contaminants. This level of treatment to segregate and discharge clean water throughout the development of the site during construction phases through the post construction phase has not been adequately addressed.

Raw Water Renovation

The proposed basin should be reconfigured to provide a higher level of runoff pretreatment prior to discharge. Redesign the basin to increase water polishing capabilities by increasing time of travel storage capacity, extend detention time and perform nutrient uptake. This can be accomplished by installing an adequately sized Micropool Extended Detention Pond measure

found in the *2004 CT Stormwater Quality Manual*. See Primary Treatment Type offered in Section 11-P1-1 thru 11-P2-14.

Note:

This plan submittal would not meet the requirements under the current General Permit nor the new permit going into effect as of October 1, 2013.

Site Contamination - VOC's / Heavy Metals

The HRP Associate report has raised concerns about solvents and heavy metals remaining on site. Though the clean-up of the site may be compliant by industrial standards according to DEEP, there is data that supports the existence of solvent contamination in the ground water along the perimeter of the property. Concerns over the development and discharge of stormwater from this site plus the potential migration of the contaminants off site towards the Quinnipiac River system are warranted.

Alternate Configuration

No alternative has been offered in the site plan packet. In an effort to balance environmental concerns while promoting economic growth, careful consideration should be given to minimizing natural resource losses, consolidating development, promote and implement the use of LID concepts, utilize green infrastructure ideas, which would have a tendency to be less intrusive and more efficient reuse of this site.

- Access site through Metals Drive.
- Preserve and protect vernal pools and critical areas in upland habitats by creating conservation easements and tax incentives for developer.
- Employ LID concepts in infiltration and recharge of clean water sources that add to the parcels water budget.
- Reduce impervious surfaces with common drives and redesign site development by consolidating / clustering of building footprints.

Stormwater Management Comments

Runoff from construction and post-construction activities has the potential to pollute wetlands and watercourses downstream of stormwater discharge locations. During the period of construction, the discharge of sediment, particularly during significant storm events, could occur even when non-structural and structural erosion and sediment controls are installed. Post construction, the increase in the quantity and peak flow of stormwater runoff, could contribute to downstream flooding and erosion problems. Additionally, the quality of stormwater runoff (post construction) could be degraded by the presence of pollutants such as total suspended solids, nutrients, and pesticides from streets and yards.

In order to minimize the pollution potential from stormwater, the following is a list of recommended management measures:

- Establish setback or buffer areas (50 feet, minimally, to 100 feet, preferably) within upland areas that are adjacent to wetlands or watercourses.
- Promote sheet flow to the maximum extent possible, by eliminating curbs, utilizing pervious pavement, installing vegetative swales, and employing level spreaders.
- Infiltrate stormwater discharges to the maximum extent possible to promote groundwater recharge and lessen the quantity of runoff needing treatment.
- Install structural stormwater management measures to treat stormwater runoff during construction. Such measures include, but are not limited to, earthen dikes/ diversions, sediment traps, check dams, level spreaders, gabions, temporary or permanent sediment basins and structures.
- Prepare a stormwater management plan, which considers both quantity and quality of runoff for the entire development site, rather than piecemeal during development of each lot.

The construction of the Wonx Spring Road Industrial Subdivision, (“site”) will be regulated by the General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities (“the construction general permit”). In accordance with Sections 4(c) and 6(b)(6) of the construction general permit, respectively, a registration form must be filed and a Pollution Control Plan (“PCP”) must be prepared and implemented. The following review comments are based upon the requirements of the construction general permit.

Prior to submitting a registration form to the DEP, a review to verify compliance with State and National Historic Preservation statutes, regulation and policies and Endangered and Threatened Species Statutes must be conducted. Please contact the Historic Commission at 860-566-3005 for the historic preservation review. Endangered & Threatened species Information is available online at <http://www.dep.state.ct.us/cgnhs/nddb/nddbpdfs.asp>. If endangered/ threatened species are present in the project area, please contact Dawn McKay of the DEEP Bureau of Natural Resources at 860-424-3592. The project will not be permitted under the construction general permit until compliance with these regulations/ statues is achieved.

The owner or developer must register the site with the Department of Energy and Environmental Protection (“DEEP”) sixty days prior to the commencement of construction activity. The Pollution Control Plan (“the PCP”) must be prepared and kept on site during the entire life of the

construction project for sites with soil disturbance between 5-10 acres. The PCP is required to be submitted to the DEEP with the registration form for sites with soil disturbance greater than 10 acres.

The PCP must include a site map as described in Section 6(b)(6)(A) of the construction general permit and a copy of the erosion and sedimentation (E & S) control plan for the site. An E & S plan which has been approved by the Town of Southington in conjunction with the DEEP Inland Water Resources Division (IWRD) and the local Soil and Water Conservation District may be included in the PCP. The PCP and site map must include specifics on controls that will be used during each phase of construction, pursuant to Section 6(b)(6)(B) of the construction general permit. Specific site maps and controls must be described in the PCP, as well as construction details for each control used. The construction general permit requires that the plan shall ensure and demonstrate compliance with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control (“the guidelines”). The Plan must be flexible to account for adjustment of controls as necessary to meet field conditions.

In order to reduce erosion potential, DEEP recommends that construction activities be phased to the maximum extent possible so that unstable areas are minimized. The construction general permit also requires that any inactive area left disturbed for over 7 days be temporarily stabilized. Areas left disturbed over 30 days must be temporarily seeded. The PCP must specify a stabilization plan (within and outside of the seeding season) which includes such measures as seeding, applying hay/ mulch, and, for slopes 3:1 and steeper, installing an appropriate grade of erosion control matting or a spray-on “soil cement” type of armor mulch.

The PCP must demonstrate that the post-construction stormwater treatment system has been designed with a goal of 80% removal of total suspended solids, pursuant to Section 6(b)(6)(C)(iii)(1) of the construction general permit. Such measures may include, but are not limited to, stormwater detention basins, stormwater retention basins, swirl concentrator technology structures (such as Vortechtechnics, Downstream Defender, Stormceptor, Stormtreat, or similar), vegetated swales, deep catch basin sumps (4' +) and stormwater infiltration devices. The PCP must also discuss the installation of velocity dissipation devices at all discharge locations as a post construction stormwater management measure. A detail of proposed measures must be provided. If site conditions allow, DEEP recommends the installation of retention or detention basins because of maintenance, cost, and efficiency considerations. The elimination of point sources through the use of level spreaders or curb elimination is also recommended.

The construction general permit (Section 6(b)(6)(D)) requires inspections of all areas at least once every seven calendar days and after every storm of 0.1 inches or greater. The PCP must also allow for the inspector to require additional control measures if the inspection finds them necessary, and should note the qualifications of personnel doing the inspections. Additionally, the PCP must include monthly inspections of stabilized areas for at least three months following stabilization.

The following are comments specific to review of the erosion and sediment control plans for the site, and a site walk conducted on August 1, 2013:

- From a stormwater management prospective, the site appears to be very well suited for the proposed activities. Although now fallow, the fact that the site previously supported an industrial building with associated infrastructure creates an opportunity for the reuse of some of the existing infrastructure, thereby diminishing the impacts normally associated with developing a virgin site. Additionally, the extensive use of onsite detention galleys coupled with a detention basin that discharges to existing off site infrastructure hews to the post construction goals of DEEP.
- During construction, a sediment trap and/ or a sediment basin with the ability to store 134 cubic yards of water storage per acre drained must be installed for drainage areas greater than 2 acres. For drainage areas where more than 5 acres is disturbed at any time, a sediment basin with an outlet engineered to remove sediment must be installed. The sediment forebays should be sized for 10% of the water quality volume with a 2:1 length to width ratio and designed in accordance with the guidelines specified in the 2004 CT Stormwater Quality Manual. In order to promote velocity reduction and solids settling, DEEP recommends constructing the forebay berms with appropriate size of riprap with a core of stone (DOT #3).
- Place all sediment clean outs from sumps, silt fencing and basins on upland soils.

In order to reduce the impact of development and address stormwater quality issues, the Department strongly encourages the use of Low Impact Development (LID) measures. LID is a site design strategy intended to maintain or replicate predevelopment hydrology through the use of small-scale controls integrated throughout the site to manage stormwater runoff as close to its source as possible. Infiltration of stormwater through LID helps to remove sediments, nutrients, heavy metals, and other types of pollutants from runoff.

Key strategies for effective LID include: infiltrating, filtering, and storing as much stormwater as feasible, managing stormwater close to where the rain/snow falls, managing stormwater at multiple locations throughout the landscape, conserving and restoring natural vegetation and soils, preserving open space and minimizing land disturbance, designing the site to minimize impervious surfaces, and providing for maintenance and education. Water quality and quantity benefits are maximized when multiple techniques are grouped together. In areas of compacted and/or possibly contaminated soils, soil suitability should be further investigated prior to selecting optimum treatment and/or remediation measures. Where soil conditions permit, we typically recommend the utilization of one, or a combination of, the following measures, some of which have been touched on previously:

- the use of pervious pavement or grid pavers, or impervious pavement without curbs or with notched curbs to direct runoff to properly designed and installed infiltration areas;
- the use of vegetated swales, tree box filters, and/or infiltration islands to infiltrate and treat stormwater runoff (from building roofs and roads);
- the minimization of access road widths and parking lot areas to the maximum extent possible to reduce the area of impervious surface;
- the use of dry wells to manage runoff from building roofs;

- the installation of rainwater harvesting systems to capture stormwater from building roofs for the purpose of reuse for irrigation (i.e. - rain barrels for residential use and cisterns for larger developments);
- the use of residential rain gardens to manage runoff from roofs and driveways;
- the use of vegetated roofs (green roofs) to detain, absorb, and reduce the volume of roof runoff; and
- providing for pollution prevention measures to reduce the introduction of pollutants to the environment.

Landscape Ecologist Comments

The REMA report raises some questions that do not appear to have been addressed in the initial assessment:

1. What is the most sensible way to evaluate the proposed Wonx Spring Road development? The project, as proposed, is practical in a basic logistical sense; *i.e.*, build the road and the basic storm water management infrastructure and then, sell some lots. However, as noted by REMA, the subsequent development of those lots will not be a simple matter of putting up buildings and parking lots. This is because the need for on-site stormwater management on soils with perched water tables may necessitate coordination not only between a given lot and the main system, but also some sort of master coordination of all of the inputs from the lots.

Consideration of the ultimate need for coordination involving what is subsequently done on the nine associated lots suggests that it will be difficult to evaluate the basic storm water management system in isolation. And, orchestrating the permitting for development of the lots piecemeal also will become difficult particularly in the situation where a lot is purchased with intent to develop, but development does not go forth until other lots have been built upon. This could possibly present a difficult situation for the Town in the future when they are asked to review development plans for the lots which were acquired with the belief that they were developable.

2. What effect will the newly-documented presence of Eastern Box Turtles have on the type of permit required by the Army Corps of Engineers; and, how might that affect the way in which the Town wants to view the project?

Both REMA and resident Frank Punzo raise questions about the presence of toxins on the site.

The reported success of the remediation of the site was based on the then-current condition of the site – *ie.*, intact soils and vegetation. It should be noted that success in remediation does not mean that all pollutants have been *removed*. Thus, there is a valid concern over the possibility of movement of toxins off-site should development occur.

Additional information on the following would be useful:

1. the current situation in regard to presence and stability of toxins on the site;
2. the patterns of groundwater flow;
3. site-specific soils mapping; and
(Note that the readily available soils data from Web Soil Survey are useful for broad planning considerations only, and are not meant to be applied to site-specific situations without field verification.)
4. the potential quality, quantity, and movement patterns of both surface and groundwater, both on-site and off-site, (a) upon initial disturbance to soil and vegetative cover due to construction of roads, drainage basins, parking lots, and buildings and (b) following subsequent routing of water off impervious surfaces after development.

Additional Comments on Functions and Values

1. The property does, in fact, seem to have some sort of recreational value judging by the well-worn path on the northwest side. The degree to which the presence of wetlands contributes to passive enjoyment of the site is not known to this reviewer.
2. The statement from REMA (p.7) about "genetic connectivity" for box turtles is a bit vague. The habitat connectivity between the proposed development site and Panthorn Park and the vicinity of LaCours Pond would indeed add to the effective size of the habitat associated with the project. However, the physical connectivity of the forest does not necessarily mean that the species within are all using the habitat links and taking advantage of the opportunity for movement and breeding with individuals from elsewhere in the linked habitat. At the same time, flattened turtles on roads elsewhere testify to the hazards of building roads through linked habitat.
3. This reviewer did not see any data concerning the numbers, nor much mention (aside from plants) of the species of the "Large interbreeding populations of birds, invertebrates, amphibians, plants, and small mammals" (REMA, p.6). Nonetheless, the diversity of plant species in a variety of cover types (both open and forested and both seasonally wet and not) on site indicates a diversity of habitat types and consequent possibility of high species diversity, thereby increasing the *wildlife support* function, as noted by REMA (p.7). Further, several wildlife species of note have been reported by residents including Eastern box turtle, Brown thrasher, Flying squirrel.
4. In addition regard to wildlife values, the documented presence of the Eastern box turtle on the site is of particular interest because it is listed as a Species of Special Concern (July 1, 2010 list of Endangered, Threatened and Special Concern Species in Connecticut). "Special Concern" means any native plant species or any native nonharvested wildlife species documented by scientific research and inventory to have a naturally restricted range or habitat in the state, to be at a low population level, to be in such high demand by man that its unregulated taking would be detrimental to the conservation of its population or has been extirpated from the state. (The turtles obviously do not fall into the extirpated [no longer present] subcategory.) The turtle report has been accepted by CT Dept. of Energy and Environmental Protection for the Natural Diversity Data Base.
5. It is not clear to this reviewer that vernal pools would be containing water for turtles to cool off (REMA p.7) during the heat of summer.

The Natural Diversity Data Base

The Natural Diversity Data (NDDDB) records for the project site indicate the following extant population of species within the vicinity of the site:

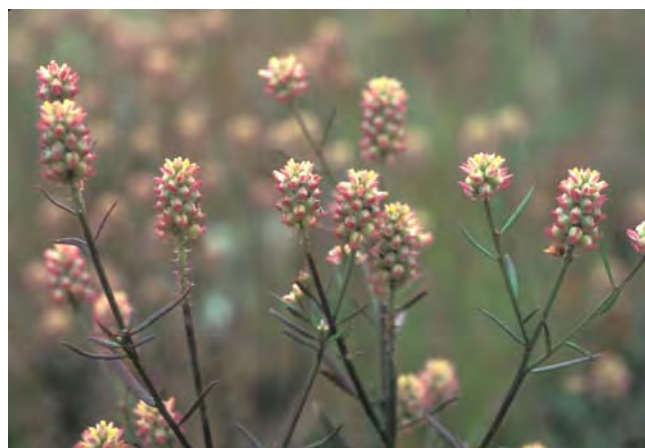
Eastern Box Turtle (*Terrapene carolina Carolina*) Protection Status: Species of Special Concern

Eastern Box Turtles require old field and deciduous forest habitats, which can include power lines and logged woodlands. They are often found near small streams and ponds. The adults are completely terrestrial but the young may be semiaquatic, and hibernate on land by digging down in the soil from October to April. They have an extremely small home range and can usually be found in the same area year after year. Eastern Box Turtles have been negatively impacted by the loss of suitable habitat. Some turtles may be killed directly by construction activities, but many more are lost when important habitat areas for shelter, feeding, hibernation, or nesting are destroyed. As remaining habitat is fragmented into smaller pieces, turtle populations can become small and isolated.

Recommendation: Precautions should be taken to protect Eastern box turtles. The following guidelines should be met:

- Silt fencing should be installed around the work area prior to activity;
 - After silt fencing is installed and prior to work being conducted, a sweep of the work should be conducted to look for turtles;
 - Workers should be apprised of the possible presence of turtles, and provided a description of the species (also see attached fact sheet)
- (http://www.ct.gov/dep/cwp/view.asp?a=2723&q=473472&depNav_GID=1655)
- Any turtles that are discovered should be moved, unharmed, to an area immediately outside of the fenced area, and positioned in the same direction that it was walking;
 - Work conducted during early morning and evening hours should occur with special care not to harm basking or foraging individuals; and
 - All silt fencing should be removed after work is completed and soils are stable so that reptile and amphibian movement between uplands and wetlands is not restricted.

Nuttall's Milkwort (*Polygala nuttallii*), a State Endangered plant species, is also known to have occurred in Southington through several historic herbarium collections made between 1898 and 1902. This species typically occurs in dry, open sandy soil and may or may not persist in the vicinity. Nuttall's milkwort has an annual life cycle and generally bloom August or September. For questions regarding State-listed plant species, please contact Nelson DeBarros (nelson.debarros@ct.gov).



The Natural Diversity Data Base includes all information regarding critical biological resources available to us at the time of the request. This information is a compilation of data collected over the years by the Department of Energy and Environmental Protection's Natural History Survey and cooperating units of DEEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the Data Base should not be substituted for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Data Base as it becomes available. If the project is not implemented within 12 months, then another Natural Diversity Data Base review should be requested for up-to-date information.

Please be advised a more detailed review may be conducted as part of any subsequent environmental permit applications submitted to the Department of Energy and Environmental Protection for the proposed site. Should state involvement occur in some other manner, specific restrictions or conditions relating to the species discussed above may apply.

Thank you for consulting the Natural Diversity Data Base. If you have further questions, please Elaine.hinsch@ct.gov or by phone at (860) 424-3011.

Connecticut Department of Energy & Environmental Protection

Eastern Box Turtle

Terrapene carolina carolina

State Species of Special Concern



Description

The eastern box turtle is probably the most familiar of the 8 species of turtles found in Connecticut's landscape. It is known for its high-domed carapace (top shell). The carapace has irregular yellow or orange blotches on a brown to black background that mimic sunlight dappling on the forest floor. The plastron (under shell) may be brown or black and may have an irregular pattern of cream or yellow. The length of the carapace usually ranges from 4.5 to 6.5 inches, but can measure up to 8 inches long. The shell is made up of a combination of scales and bones, and it includes the ribs and much of the backbone.

Each individual turtle has distinctive head markings. Males usually have red eyes and a concave plastron, while females have brown eyes and a flat plastron. Box turtles also have a horny beak, stout limbs, and feet that are webbed at the base. This turtle gets its name from its ability to completely withdraw into its shell, closing itself in with a hinged plastron. Box turtles are the only Connecticut turtle with this ability.

Range

Eastern box turtles are found throughout Connecticut, except at the highest elevations. They range from southeastern Maine to southeastern New York, west to central Illinois, and south to northern Florida.

Habitat and Diet

In Connecticut, this terrestrial turtle inhabits a variety of habitats, including woodlands, field edges, thickets, marshes, bogs, and stream banks. Typically, however, box turtles are found in well-drained forest bottomlands and open deciduous forests. They will use wetland areas at various times during the season. During the hottest part of a summer day, they will wander to find springs and seepages where they can burrow into the moist

soil. Activity is restricted to mornings and evenings during summer, with little to no nighttime activity, except for egg-laying females. Box turtles have a limited home range where they spend their entire life, ranging from 0.5 to 10 acres (usually less than 2 acres).

Box turtles are omnivorous and will feed on a variety of food items, including earthworms, slugs, snails, insects, frogs, toads, small snakes, carrion, leaves, grass, berries, fruits, and fungi.

Life History

From October to April, box turtles hibernate by burrowing into loose soil, decaying vegetation, and mud. They tend to hibernate in woodlands, on the edge of woodlands, and sometimes near closed canopy wetlands in the forest. Box turtles may return to the same place to hibernate year after year. As soon as they come out of hibernation, box turtles begin feeding and searching for mates.

The breeding season begins in April and may continue through fall. Box turtles usually do not breed until they are about 10 years old. This late maturity is a result of their long lifespan, which can range up to 50 to even over 100 years of age. The females do not have to mate every year to lay eggs as they can store sperm for up to 4 years. In mid-May to late June, the females will travel from a few feet to more than a mile within their home range to find a location to dig a nest and lay their eggs. The 3 to 8 eggs are covered with dirt and left to be warmed by the sun. During this vulnerable time, skunks, foxes, snakes, crows, and raccoons often raid nests. Sometimes, entire nests are destroyed. If the eggs survive, they will hatch in late summer to early fall (about 2 months after being laid). If they hatch in the fall, the young turtles may spend the winter in the nest and come out the following spring.

As soon as the young turtles hatch, they are on their own and receive no care from the adults. This is a dangerous time for young box turtles because they do not develop the hinge for closing into their shell until they are about 4 to 5 years old. Until then, they cannot entirely retreat into their shells. Raccoons, skunks, foxes, dogs, and some birds will prey on young turtles.

Conservation Concerns

The eastern box turtle was once common throughout the state, mostly in the central Connecticut lowlands. However, its distribution is now spotty, although where found, turtles may be locally abundant. Because of the population decline in Connecticut, the box turtle was added to the state's List of Endangered, Threatened, and Special Concern Species when it was revised in 1998. It is currently listed as a species of special concern. The box turtle also is protected from international trade by the 1994 CITES treaty. It is of conservation concern in all the states where it occurs at its northeastern range limit, which includes southern New England and southeastern New York.

Many states have laws that protect box turtles and prohibit their collection. In Connecticut, eastern box turtles cannot be collected from the wild (DEP regulations 26-66-14A). Another regulation (DEP regulations 26-55-3D) "grandfathers" those who have a box turtle collected before 1998. This regulation limits possession to a single turtle collected before 1998. These regulations provide some protection for the turtles, but not enough to combat some of the even bigger threats these animals face. The main threats in Connecticut (and other states) are loss and fragmentation of habitat due to deforestation and spreading suburban development; vehicle strikes on the busy roads that bisect the landscape; and indiscriminate (and now illegal) collection of individuals for



pets.

Loss of habitat is probably the greatest threat to turtles. Some turtles may be killed directly by construction activities, but many more are lost when important habitat areas for shelter, feeding, hibernation, or nesting are destroyed. As remaining habitat is fragmented into smaller pieces, turtle populations can become small and isolated.

Adult box turtles are relatively free from predators due to their unique shells. The shell of a box turtle is extremely hard. However, the shell is not hard enough to survive being run over by a vehicle. Roads bisecting turtle habitat can seriously deplete the local population. Most vehicle fatalities are pregnant females searching for a nest site.

How You Can Help

- Leave turtles in the wild. They should never be kept as pets. Whether collected singly or for the pet trade, turtles that are removed from the wild are no longer able to be a reproducing member of a population. Every turtle removed reduces the ability of the population to maintain itself.
- Never release a captive turtle into the wild. It probably would not survive, may not be native to the area, and could introduce diseases to wild populations.
- Do not disturb turtles nesting in yards or gardens.
- As you drive, watch out for turtles crossing the road. Turtles found crossing roads in June and July are often pregnant females and they should be helped on their way and not collected. Without creating a traffic hazard or compromising safety, drivers are encouraged to avoid running over turtles that are crossing roads. Also, still keeping safety precautions in mind, you may elect to pick up turtles from the road and move them onto the side they are headed. Never relocate a turtle to another area that is far from where you found it.
- Learn more about turtles and their conservation concerns. Spread the word to others on how they can help Connecticut's box turtle population.

*The production of this Endangered and Threatened Species Fact Sheet Series is made possible by donations to the Endangered Species-Wildlife Income Tax Checkoff Fund.
(5/08)*

Traffic Analysis and Considerations

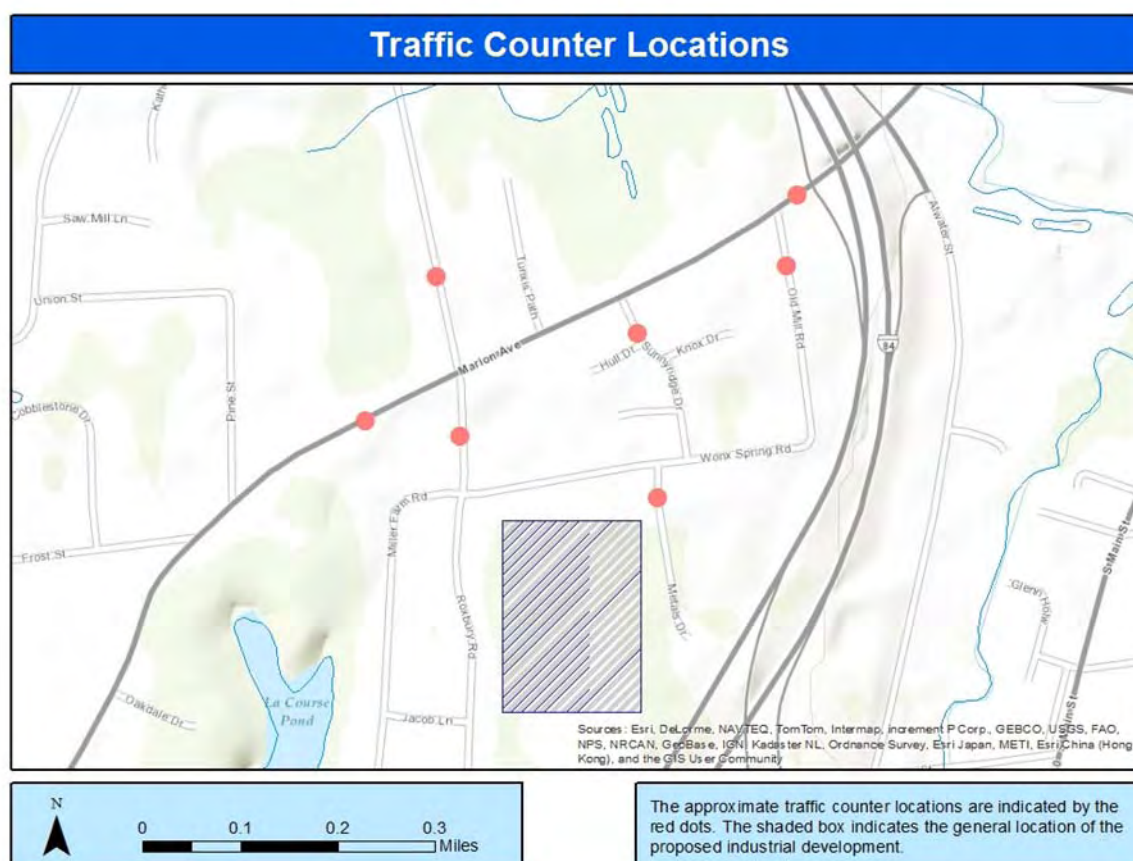
Introduction

The Central Connecticut Regional Planning Agency (CCRPA) conducted a local traffic study to contribute to the town's analysis of the transportation impacts associated with the proposed industrial development on Wonx Spring Road. The primary purpose of this report is to present the results of the CCRPA traffic study as well as noting additional transportation-related considerations associated with the development.

Traffic Analysis

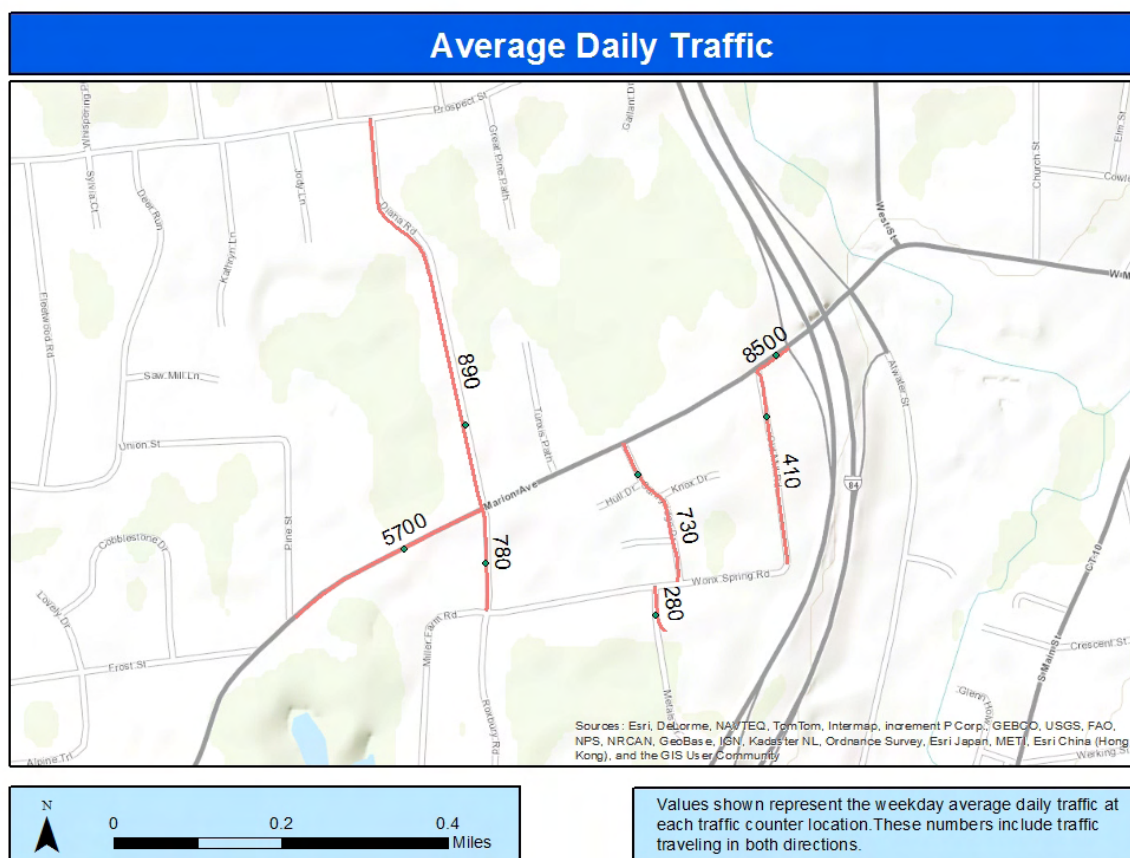
Methodology

CCRPA staff installed traffic counters in seven locations near the potential development site. Traffic data regarding average daily traffic, peak traffic hour, speed, class of vehicle, and direction were collected from July 26, 2013 to August 1, 2013.



Current Weekday Traffic

The existing industrial site on Wonx Spring Road generates about 280 average daily trips on weekdays with a peak of 38 trips in one hour. Traffic between Marion Avenue and the three local roads connecting to the parallel stretch of Wonx Spring Road has a combined total of 1,920 average daily trips with the majority, 79% occurring on Sunnyside Drive and Wonx Spring Road. The majority of trailer truck traffic is on Wonx Spring Road. The third local connector, Old Mill Road receives just 21% of the daily traffic. This may be partly due to its sharp turn onto Wonx Spring Road, which trucks cannot make.



On an average weekday morning, the majority of traffic on the local roads travels to Marion Avenue. The majority of morning traffic on Marion Avenue travels eastbound toward I-84. On weekday afternoons, the majority of traffic travels in the reverse direction from the morning. Traffic on Metals Drive is the exception; most morning traffic is inbound to the industrial facilities and outbound in the afternoon.

The existing industrial businesses on Wonx Spring Road are approximately 90,000 square feet. The 280 average daily trips generated by these sites may be lower than normal because the data was collected in late July to early August. There is often less traffic in the summer when it is common for employees to go on vacation.

Traffic Projections

The Trip Generation report developed by the Institute of Transportation Engineers is an accepted standard for traffic volume projections, and was used to estimate the potential traffic generated by the proposed Wonx Spring Road industrial development. For this projection, the estimated gross floor area was used as a basis to project trip generation for a general light industrial development. The proposed plan was used as a basis to project trip generation for a general light industrial development. The proposed development consists of nine buildings mostly between 10,000 – 25,000 square feet, with a couple of them being larger. A conservative assumption of 17,000 square feet per building was used to estimate a total square footage of 153,000 square feet. The Trip Generation report estimates 1,040 weekday trip swill be generated for a development of this type and size. The report's traffic generation estimates are based on a study of 18 light industrial developments.

The actual average daily traffic will depend on a variety of factors such as economic conditions, number of employees, type of industry and manufacturing process (more/less automated), and the number of work shifts.

Additional Considerations

<i>Road Suitability for Truck Traffic (Safety & Infrastructure)</i>	<p>The neighborhood roads leading to the facility site may not currently be suitable for increased volumes of freight traffic. Concerns include:</p> <ul style="list-style-type: none"> • Road widths • Curve radii • Pedestrian safety • Town funding for potential road upgrades
<i>Visual Screen along I-84</i>	An industrial development should include a visual screen along I-84 to address the consideration of aesthetics in the CTDOT Highway Design Manual.
<i>Local Air Quality & Noise Pollution</i>	<p>Increased truck emissions may contribute to decreased air quality within the neighborhood.</p> <p>Noise from the increased truck traffic may detract from the adjacent residential community's environment.</p>
<i>Signage and Wayfinding</i>	New signs may be required for trucks traveling between I-84 and the proposed Wonx Spring Road industrial development.

About the Team

The King's Mark Environmental Review Team (ERT) is a group of environmental professionals drawn together from a variety of federal, state and regional agencies. Specialists on the Team include geologists, biologists, soil scientists, foresters, climatologists and landscape architects, recreational specialists, engineers and planners. The ERT operates with state funding under the aegis of the King's Mark Resource Conservation and Development (RC&D) Area - an 83 town area serving western Connecticut. (www.kingsmark.org)

As a public service activity, the Team is available to serve towns within the King's Mark RC&D Area - *free of charge*.

Purpose of the Environmental Review Team

The Environmental Review Team is available to assist towns in the review of sites proposed for major land use activities or natural resource inventories for critical areas. For example, the ERT has been involved in the review of a wide range of significant land use activities including subdivisions, sanitary landfills, commercial and industrial developments and recreation/open space projects.

Reviews are conducted in the interest of providing information and analysis that will assist towns and developers in environmentally sound decision making. This is done through identifying the natural resource base of the site and highlighting opportunities and limitations for the proposed land use.

Requesting an Environmental Review

Environmental reviews may be requested by the chief elected official of a municipality or the chairman of an administrative agency such as planning and zoning, conservation or inland wetlands. Environmental Review Request Forms are available at your local Conservation District and through the CTERT Coordinator. This request form must include a summary of the proposed project, a location map of the project site, written permission from the landowner / developer allowing the Team to enter the property for the purposes of a review and a statement identifying the specific areas of concern the Team members should investigate. When this request is reviewed by the local Conservation District and approved by the CTERT Subcommittee, the Team will undertake the review. At present, the ERT can undertake approximately two reviews per month depending on scheduling and Team member availability.

For additional information regarding the Environmental Review Team, please contact the CT ERT Coordinator, Connecticut Environmental Review Team, P.O. Box 70, Haddam, CT 06438. The telephone number is 860-345-3977, connecticutert@aol.com, www.cterg.org.