Harrison Township, New Jersey

PRELIMINARY INVESTIGATION
BLOCK: 64
LOTS: 2, 5, and 21

4/3/2014

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Acknowledgements

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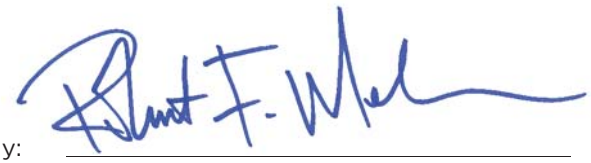

Robert F. Melvin, AICP/PP
NJ Planner License No. 04018

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1.0 Introduction

1.1. Study Authorization

Harrison Township through Resolution No. 166-2013 (Appendix C) has requested that Group Melvin Design perform a Preliminary Investigation into Block 64, Lots 2, 5, and 21 to ascertain whether this area qualifies under N.J.S.A. 40A:12A-5 as an "Area in Need of Redevelopment"

Figure 1 identifies the location and surrounding environs of Block 64, Lots 2, 5, and 21.

1.2. Summary of Findings

The analysis presented within this document serves as the basis for the recommendation that Block 64, Lots 2, 5, and 21 qualify as an Area in Need of Redevelopment.

1.2.a. Block 64, Lot 2

This report finds that the presence of topsoil contamination from Dieldrin, a toxic insecticide banned since 1987, qualifies the site as obsolete and a detriment to the safety, health, morals, or welfare of the community.

1.2.b. Block 64, Lot 5

An investigation of the property found evidence that the principal structure on Block 64, Lot 5 is in a state of disrepair that results in the site being a detriment to the health, safety, morals and welfare of the community.

1.2.c. Block 64, Lot 21

This report concurs with the analysis performed by Marathon Engineering and Environmental Services, Inc. that states that the only feasible option for remediating contaminated soil identified on lot 2 is to blend this soil with clean topsoil from lot 21. Marathon's analysis also identified how this revised strategy from that originally proposed in ERI's Remedial Action Workplan is consistent with Harrison Township's ordinance.

1.2.d. Criterion H

Additionally, this report finds that Block 64, Lots 2, 5, and 21 meet the "H" criterion, Smart Growth Consistency, due to the site's relationship to both state and local smart-growth objectives and because of the site's proximity to the Village of Mullica Hill.

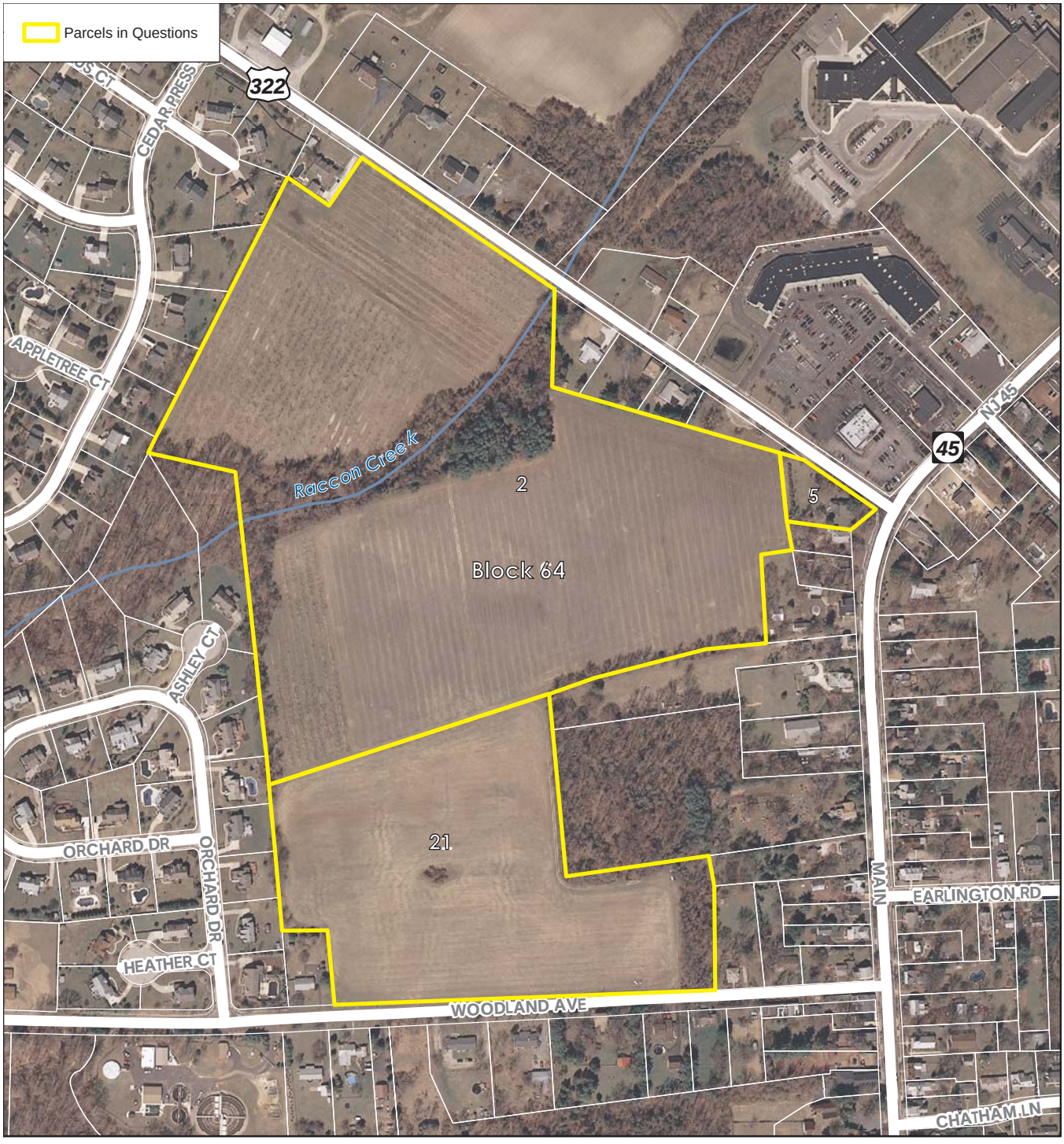
As a result, Block 64, Lots 2, 5, and 21 warrants accompanying guidelines that will ensure that the entire area is developed in a manner that adheres to local and state plans, incorporates sound principals of urban planning and design, promotes the public welfare, and contributes to the sustainable economic development of the Township.

1.3. Non-Condemnation

Block 64, Lots 2, 5, and 21 is recommended to be a "Non-Condemnation Redevelopment Area."

As of 2013, the Legislature requrires that Preliminary Investigations state whether the redevelopment area determination shall authorize the municipality to use all those powers provided by the Legislature for use in a redevelopment area, including eminent domain. Those Redevelopment Areas where the municipality declares it will not use eminient domain are refered ot as "Non-Condemnation Redevelopment Areas." Resolution 81-2014 (Appendix D) authorized the Study to establish Block 64, Lots 2, 5, and 21 as a "Condemnation Redevelopment Area". However, it is the recommendation of this Study that Block 64, Lots 2, 5, and 21 be established as a "Non-Condemnation Redevelopment Area".

Figure 1. Aerial of Site



NOTE: Construction of the Route 322 Mullica Hill Bypass is not reflected on this map.

N

0 200 400 800 Feet

2.0 Redevelopment Law

2.1. Purpose of the Act

New Jersey's Local Redevelopment and Housing Law (LRHL), empowers municipalities and local governments with the ability to initiate a process that transforms underutilized or poorly designed properties into healthier, more vibrant, or economically productive land areas. The process has been used successfully across New Jersey to creatively improve properties meeting statutory redevelopment criteria. Projects approved for redevelopment are often eligible for certain types of technical and financial assistance from the State.

2.2. Redevelopment Procedure

The LRHL requires municipalities to perform a number of steps before it may exercise its Redevelopment powers. This process is meant, in part, to ensure that the Governing Body acts in concert with the goals and objectives of the Township's Master Plan. Recognizing the Planning Board's role as the steward of the Master Plan, these steps require the Planning Board to make recommendations to the Township Council. The required steps are as follows:

A. The Governing Body must adopt a resolution directing the Planning Board to perform a preliminary investigation to determine whether a specified area is in need of redevelopment according to criteria set forth in the LRHL (N.J.S.A. 40A:12A-5). The Township Council has adopted Resolution No. 2013-6-14.

B. The Planning Board must prepare and make available a map delineating the boundaries of the proposed redevelopment area, specifying the parcels to be included in it. This map should be accompanied by a statement setting forth the basis of the investigation.

C. The Planning Board must then conduct the investigation and produce a report presenting the findings. The Board must also hold a duly noticed hearing to present the results of the investigation and to allow interested parties to give testimony. The Planning Board then may adopt a resolution recommending a course of action to the Governing Body.

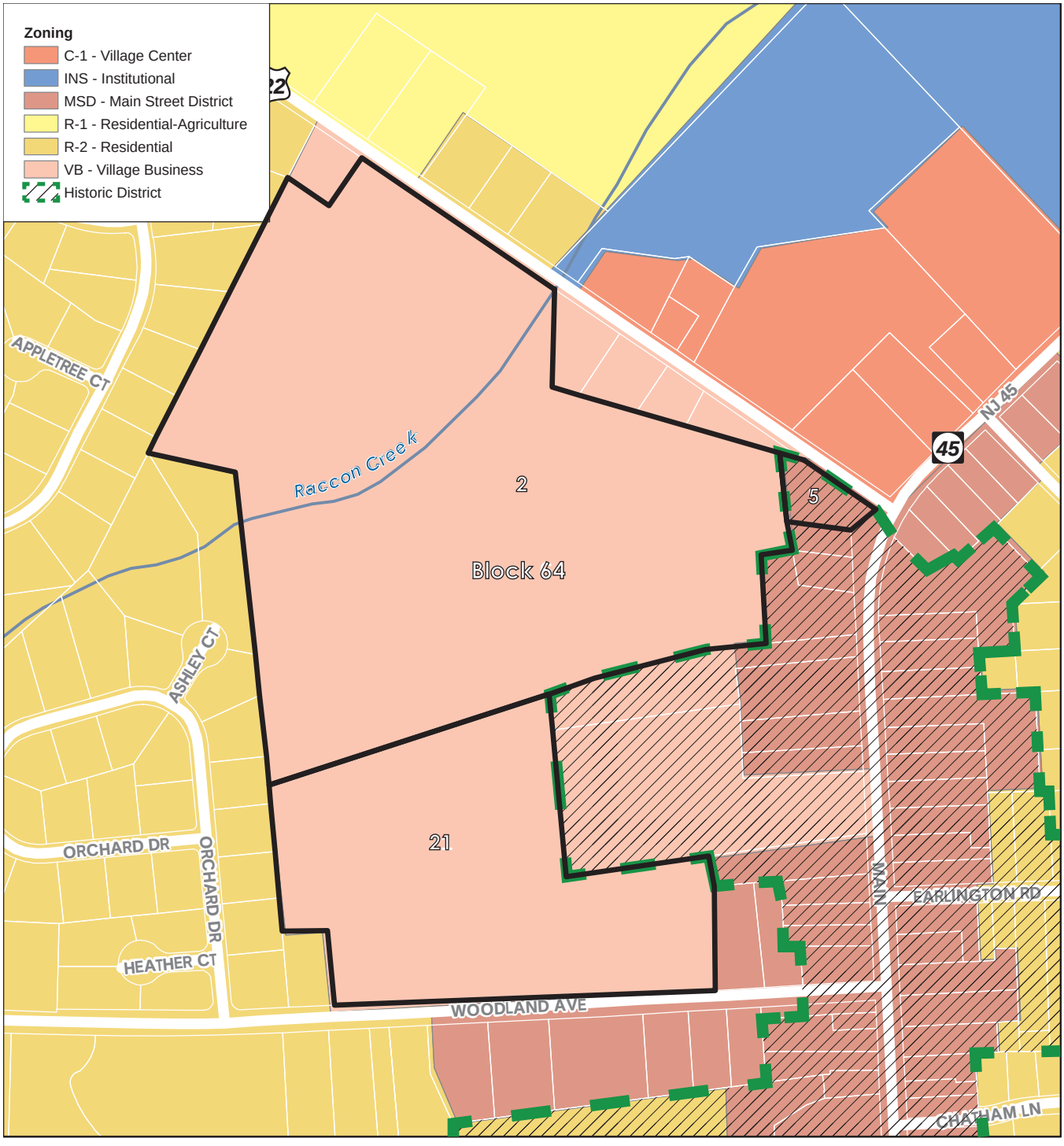
D. The Governing Body may act on this recommendation by adopting a resolution designating the area an "Area in Need of Redevelopment". The Governing Body must make the final determination as to the Redevelopment Area boundaries.

E. A Redevelopment Plan must be prepared establishing the goals, objectives, and specific actions to be taken with regard to the "Area in Need of Redevelopment."

F. The Governing Body may then act on the Plan by passing an ordinance adopting the Plan as an amendment to the Township's Zoning Ordinance.

Only after completion of this process is the Township able to exercise the powers granted to it under the State Redevelopment Statute.

Figure 2. Zoning



NOTE: Construction of the Route 322 Mullica Hill Bypass is not reflected on this map.

Existing Conditions

2.3. Description of Site Area

The site area is generally bounded by Route 322 to the north, two existing single-family detached residential developments to the west, Woodland Avenue to the south, and with the exception of lot 5, the westernmost property lines of the businesses and homes that front onto North Main Street to the east. The Village of Mullica Hill is located at the eastern edge of the study area. According to property tax records, the site is composed primarily of two large farm parcels, lots 2 and 21, which front onto Route 322 and Woodland Avenue respectively. The site is bisected at lot 2 by a wooded section of the Raccoon Creek, and is partially covered by wetlands. The third parcel that composes the site, lot 5, is located at the intersection of Route 322 and North Main Street.

2.4. Zoning

The area being reviewed is located within the Village of Mullica Hill and falls under the Township's VB Village Business District and MSD Main Street District ordinances. The Village of Mullica Hill is Harrison Township's historic center, and sits at the confluence of several major roadways that run through the Township. The VB Village Business District permits a mix of commercial and retail uses within planned developments. The MSD Main Street District permits buildings that may serve a single-use or mixed-use, and includes single-family dwellings, general retail uses, institutional uses, shops specializing in personal or business services, eating and drinking establishments, studios, utility offices and facilities, amusements, professional offices, and consignment markets.

The area being reviewed also falls partially within the Mullica Hill Historic District, which is intended to preserve the historic nature and unique character of the Village of Mullica Hill, the traditional center of the Township.

Figure 2 contains a Zoning map of the site and its surroundings and shows the location of the three lots in question.

2.5. Ownership & Tenancy

Block	Lot	Zoning*	Property Class**	Address	Owner
64	2	VB	3B	Swedesboro Rd	Holtzhauser, Charles & Son
64	5	MD and HD	15C	94 North Main St	Harrison Township
64	21	VB	3B	Woodland Ave	Gardiner, Ethel E

*Zoning:
VB - Village Business
MD - Main Street District
HD - Historic District Overlay

**Property Class:
3B - Farm (Qualified)
15C - Exempt Public

3.0 Statutory Criteria

A study area qualifies as being an "Area in Need of Redevelopment" if it meets at least one of the eight statutory criteria listed in Section 40A:12A-5 of the Local Redevelopment and Housing Law:

A. The generality of buildings are substandard, unsafe, unsanitary, dilapidated, or obsolescent, or poses any of such characteristics, or are so lacking in light, air, or space, as to be conducive to unwholesome living or working conditions.

B. The discontinuance of the use of buildings previously used for commercial, manufacturing, or industrial purposes; the abandonment of such buildings; or the same being allowed to fall into so great a state of disrepair as to be untenable.

C. Land that is owned by the municipality, the county, a local housing authority, redevelopment agency or redevelopment entity, or unimproved vacant land that has remained so for a period of ten years prior to adoption of the resolution, and that by reason of its location, remoteness, lack of means of access to developed sections or portions of the municipality, or topography, or nature of the soil, is not likely to be developed through the instrumentality of private capital.

D. Areas with buildings or improvements which, by reason of dilapidation, obsolescence, overcrowding, faulty arrangement or design, lack of ventilation, light and sanitary facilities, excessive land coverage, deleterious land use or obsolete layout, or any combination of these or other factors, are detrimental to the safety, health, morals, or welfare of the community.

E. A growing lack or total lack of proper utilization of areas caused by the condition of the title, diverse ownership of the real properties therein or other similar conditions which impede land assemblage or discourage the undertaking of improvements, resulting in a stagnant and unproductive condition of land potentially useful and valuable for contributing to and serving the public health, safety and welfare, which condition is presumed to be having a negative social or economic impact or otherwise being detrimental to the safety, health, morals, or welfare of the surrounding area or the community in general.

F. Areas, in excess of five contiguous acres, whereon buildings or improvements have been destroyed, consumed by fire, demolished or altered by the action of storm, fire, cyclone, tornado, earthquake or other casualty in such a way that the aggregate assessed value of the area has been materially depreciated.

G. In any municipality in which an enterprise zone has been designated pursuant to the "New Jersey Urban Enterprise Zones Act," P.L.1983, c.303 (C.52:27H-60 et seq.) the execution of the actions prescribed in that act for the adoption by the municipality and approval by the New Jersey Urban Enterprise Zone Authority of the zone development plan for the area of the enterprise zone shall be considered sufficient for the determination that the area is in need of redevelopment pursuant to sections 5 and 6 of P.L.1992, c.79 (C.40A:12A-5 and 40A:12A-6) for the purpose of granting tax exemptions within the enterprise zone district pursuant to the provisions of P.L.1991, c.431 (C.40A:20-1 et seq.) or the adoption of a tax abatement and exemption ordinance pursuant to the provisions of P.L.1991, c.441 (C.40A:21-1 et seq.). The municipality shall not utilize any other redevelopment powers

within the urban enterprise zone unless the municipal governing body and planning board have also taken the actions and fulfilled the requirements prescribed in P.L.1992, c.79 (C.40A:12A-1 et al.) for determining that the area is in need of redevelopment or an area in need of rehabilitation and the municipal governing body has adopted a redevelopment plan ordinance including the area of the enterprise zone.

H. The designation of the delineated area is consistent with smart growth planning principles adopted pursuant to law or regulation.

N.J.S.A. 40A:12A-3 further states that "A redevelopment area may include lands, buildings, or improvements which of themselves are not detrimental to the public health, safety or welfare, but the inclusion of which is found necessary, with or without change in their condition, for the effective development of the area of which they are a part." This is commonly referred to as the "Section 3 Criteria."

According to the Redevelopment Handbook, this section allows for the inclusion of properties that do not meet the statutory criteria but are,"essential to be included in the designation to effectively redevelop the area." Examples of such properties include properties located within and surrounded by otherwise blighted area, property that are needed to provide access to an area to be redeveloped, areas needed for infrastructure or utilities, or properties that otherwise could be determined to be critical to the area's successful redevelopment.

4.0 Applicability of Statutory Criterion "A"

4.1. Introduction

4.1.a. Statutory Language

The generality of buildings are substandard, unsafe, unsanitary, dilapidated, or obsolescent, or poses any of such characteristics, or are so lacking in light, air, or space, as to be conducive to unwholesome living or working conditions.

4.2. Block 64, Lot 5

Criteria "A" applies to Block 64, Lot 5 due to substandard conditions of the structure and site configuration based on information obtained through a survey of the property and the building's exterior and interior conducted by Group Melvin Design on October 1, 2013.

Substandard Structure: The structure on Block 64, Lot 5 is in a state of disrepair that has caused the building to qualify as substandard. As illustrated in the photographs shown in Figure 3, several issues related to this deterioration are evident:

1. Deterioration and rotting at the underside of the roof. (Photos A, C, & F)
2. Damage to the roof exterior as evidenced by organic growth on the roof shingles. (Photo G)
3. Deterioration and damage to masonry at the buildings foundation. (Photo B)
4. Organic growth surrounding exterior electrical systems. (Photo D)
5. Structural damage to the underside of the porch and porch railings. (Photos E, H, & J)
6. Deterioration to structural integrity of the gable. (Photo I)

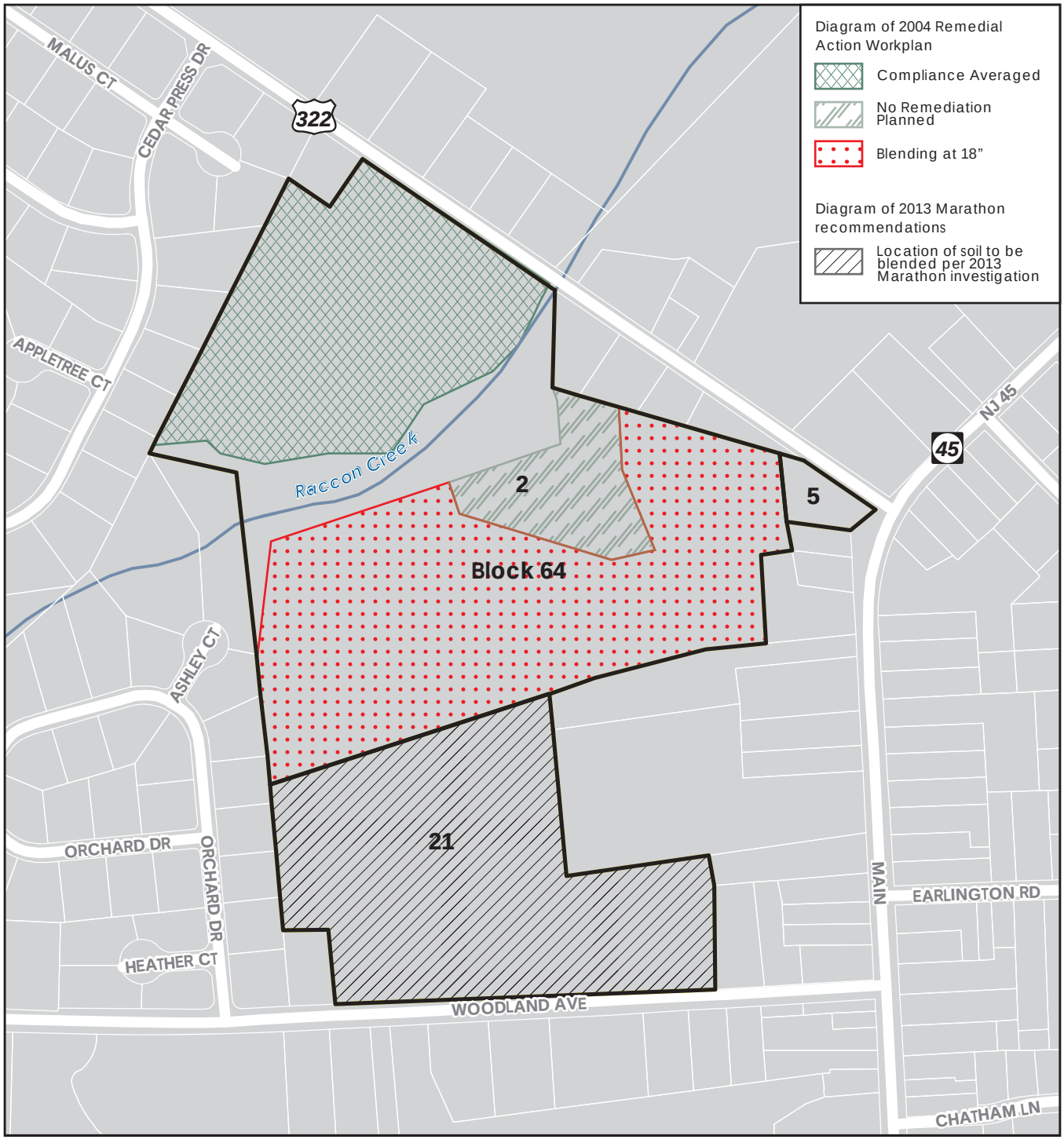
These issues combined indicate the building is substandard, unsafe, and dilapidated and is not conducive to wholesome living or working conditions.

4.2.a. Conclusion

This report concludes that the property and building survey found evidence that the principal structure on Block 64, Lot 5 is in a state of disrepair that results in the site being a detriment to the health, safety, morals and welfare of the community and posesses characteristics as to be conducive to unwholesome living or working conditions.

Figure 3. Photographs of Structural Issues at Block 64, Lot 5

Figure 4. Diagram of 2004 Remediation Action Workplan and recommendations of 2013 Marathon Investigation



NOTE: Construction of the Route 322 Mullica Hill Bypass is not reflected on this map.

5.0 Applicability of Statutory Criterion "D"

5.1. Introduction

5.1.a. Statutory Language

Areas with buildings or improvements which, by reason of dilapidation, obsolescence, overcrowding, faulty arrangement or design, lack of ventilation, light and sanitary facilities, excessive land coverage, deleterious land use or obsolete layout, or any combination of these or other factors, are detrimental to the safety, health, morals, or welfare of the community.

5.2. Dieldrin Contamination

5.2.a. Block 64, Lot 2 and 4 Remedial Action Workplan: 2004

In July 2004, OBH Homes contracted Environmental Resources, Inc (ERI) to conduct a Remedial Action Workplan on Block 64 Lots 2 and 4, also known as the Holtzhauser Property (Appendix A). That plan investigated concerns that past application of pesticides may have adversely impacted soil. There was also concern that the potential underground storage tank may have discharged to soil or groundwater.

That investigation concluded that Dieldrin, a toxic insecticide banned in 1987, was detected in the southern portion of the site at levels that exceed either the Unrestricted Use Soil Cleanup Criteria or the Restricted Use Soil Cleanup Criteria. It concluded that an estimated either (8) acre-feet or approximately 13,000 cubic yards of topsoil contains contaminants at concentrations greater than the Unrestricted Use Soil Cleanup Criteria levels. This was based on findings that the contamination was limited to the top six inches of soil and that the on-site stream had not be impacted.

The study evaluated a number of remedial alternatives, including no action, on-site containment, and excavation. The study proposed different options for the north and southern portions of the site. On the northern portion of the site where contamination was not as severe, Environmental Resolutions, Inc. proposed compliance averaging[1] on approximately eleven (11) acres of land (See Figure 4).

On the souther portion of the site, where contamination was more extensive, the Workplan proposes remediation by soil blending. The Workplan proposed this strategy for sixteen (16) acres of land. It estimated that a 2 to 1 mix would be needed, resulting in a blending zone of eighteen (18) inches of depth for the 6 inches of contaminated soil. (See Figure 4)

The remedial cost estamate including blending, sampling, analytical, and constustling fees was estamated to be $80,000 in 2004.

1 The average contaminant concentration in an area of concern may be used to determine compliance with remediation standards or the Soil Cleanup Criteria rather than the contaminant concentration of individual samples. This approach is called "compliance averaging." (nj.gov/dep/srp/news/1995/95spr_08.htm)

5.2.b. Block 64, Lot 21 Investigation & 2004 Remedial Action Workplan Evaluation: 2013

In November 2013, Marathon Engineering and Environmental Services performed an investigation of Block 64, Lot 21, also known as the Gardiner Property (Appendix B). No detectable concentrations of dieldrin were identified on the Gardiner Property.

ERI's Remedial Action Workplan (RAW) prepared in 2004 recommended blending contaminated surface soils (in the 0-6 inch interval) with clean soils below, at the same site, between the 6-18 inch interval.Marathon's analysis of the 2004 RAW agreed that soil blending was the most feasible solution to address the contamination, however, Marathon disagreed with ERI's methodology of combining surface soils with deeper subsurface soils for the following reasons:

> Item 1: "For soil blending to be effective and cost efficient, there needs to be a source of clean soil that is free of dieldrin. While ERI's investigation revealed the impacted soils was limited to the top 6-inch interval, it is likely that the soils on the Holtzhauser Property in the 6 to 12-inch interval still contain dieldrin, just at concentrations below the NJDEP's Residential Direct Contact Soil Remediation Standards ("RDCSRS"). Soil blending projects often fail because the "clean" soil still has dieldrin at concentrations below the RDCSRS. In these instances, a much greater quantity of clean soil is required to achieve the targeted RSDSRS than blending with soil that does not contain any detectable concentrations of dieldrin".
>
> Item 2: "Blending surface soils with subsurface soils often leaves a fill material that does not contain enough organic matter to be used as top soil, but enough organic matter that it cannot be used as structural fill material".
>
> Item 3: "Blending with deeper subsurface soils is difficult because the soils are compacted. The RAW proposes blending to depths of 18 inches to meet the RDCSRS. Typically, blending in-situ is only effective to a depth of 12 inches".

Marathon recommended that the only feasible option to complete soil blending on the Holtzhauser Property was to use clean topsoil obtained from the Gardiner Property. This strategy was recommended because it "eliminates the uncertainty described in Item 1 above because we have sufficient analytical data on Gardiner Property topsoil to know that it is free of dieldrin". Additionaly, blending topsoil from these two properties "will preserve a natural resource by creating a blended soil that is free of dieldrim while still containing enough organic matter to support vegetation". Marathon also noted that this strategy would be consistent with Harrison Township's Topsoil Protection Ordinance, § 192-35 which states that:

> "No topsoil shall be removed from the site or used as spoil. Topsoil moved during the course of construction shall be redistributed so as to provide at least six inches of cover to all areas of the subdivision and shall be stabilized by seeding or planing. Under no circumstances shall any soil or earth be sold or otherwise removed from the site, unless application is made and approval granted by the Township Engineer".

5.2.c. Dieldrin: a detriment to the safety, health, morals, or welfare of the community

According to the EPA:

> Dieldrin is an insecticide and a by-product of the pesticide Aldrin. From 1950 to 1974, dieldrin was widely used to control insects on cotton, corn and citrus crops. Also, dieldrin was used to control locusts and mosquitoes, as a wood preserve, and for termite control. Usually seen as a white or tan powder, most uses of dieldrin were banned in 1987, however, dieldrin is no longer produced in the United States due to its harmful effects on humans, fish, and wildlife. Dieldrin is a persistent, bioacculumative, and toxic (PBT) pollutant targeted by the EPA. (epa.gov/pbt/pubs/aldrin.htm)

One of the major concerns about Dieldrin is that it is bioaccumulative: it does not break down easily and becomes more concentrated as it moves up the food chain to humans and other wildlife. Plants can take up dieldrin from the soil and store it in their leaves and roots. Fish or animals that eat dieldrin-contaminated materials store a large amount of the dieldrin in their fat.

Exposure to Aldrin and Dieldrin occurs through eating contaminated foods or drinking water, breathing air, or coming into contact with contaminated soil. The effects of Dieldrin exposure include:

- Decreased effectiveness of the immune system
- Increased infant mortality
- Reduced reproductive success
- Cancer
- Birth defects
- Damage to the kidneys

Although Dieldrin does not dissolve in water very well, it does attach to soil and to sediments. As such, dieldrin can travel large distances by attaching to dust particles, which can then be transported great distances by wind.[2]

2 "Public Health Statement Aldrin and Dieldrin." Agency for Toxic Substance and Disease Registry, Division of Toxicology. CAS#: Aldrin 309-00-02 Dieldrin 60-57-1

5.2.d. Conclusions

This report concludes that the Enviornmental Resources, Inc. study and information published by the Enviornmental Protection Agency and the Agency for Toxic Substance and Disease Registry clearly shows that, due to Dieldrin soil contamination, Block 64, Lot 2 is a detriment to the health, safety, morals and welfare of the community. The contaminated soil poses a threat to those who may live, work, or occupy the site. Additionally, because Dieldrin may attach to dust, the site poses a threat to nearby residents.

This report also accepts the findings of the investigation performed by Marathon Engineering in 2013 that the Environmental Resources, Inc. 2004 Remedial Action Workplan proposes an incorrect methodology for addressing documented soil contamination on Lot 2. This report accepts Marathon's determination that blending topsoil from Block 64, Lot 21 with the contaminated topsoil on Lot 2 is the only feasible method for addressing the contamination consistent with data obtained during both the 2004 and 2013 investigations and with the Township's ordinance. The inclusion of Lot 21 into the redevelopment area designation is consistent with Section 3 of New Jersey's Local Redevelopment and Housing Law which states that each individual parcel within a Redevelopment Area is not required to meet the statutory criteria for inclusion:

> "A redevelopment area may include lands, buildings, or improvements which of themselves are not detrimental to the public health, safety or welfare, but the inclusion of which is found necessary, with or without change in their condition, for the effective redevelopment of the area of which they are part". (NJ Local Redevelopment and Housing Law)

The 2013 Marathon Engineering investigation concluded that utilizing clean topsoil tested for Lot 21 is the only feasible method for redevelopment of Lot 2, and is consistent with Section 3 of the State's Local Redevelopment and Housing Law.

6.0 Applicability of Statutory Criterion "H"

6.1. Introduction

6.1.a. Statutory Language

The designation of the delineated area is consistent with smart growth planning principles adopted pursuant to law or regulation.

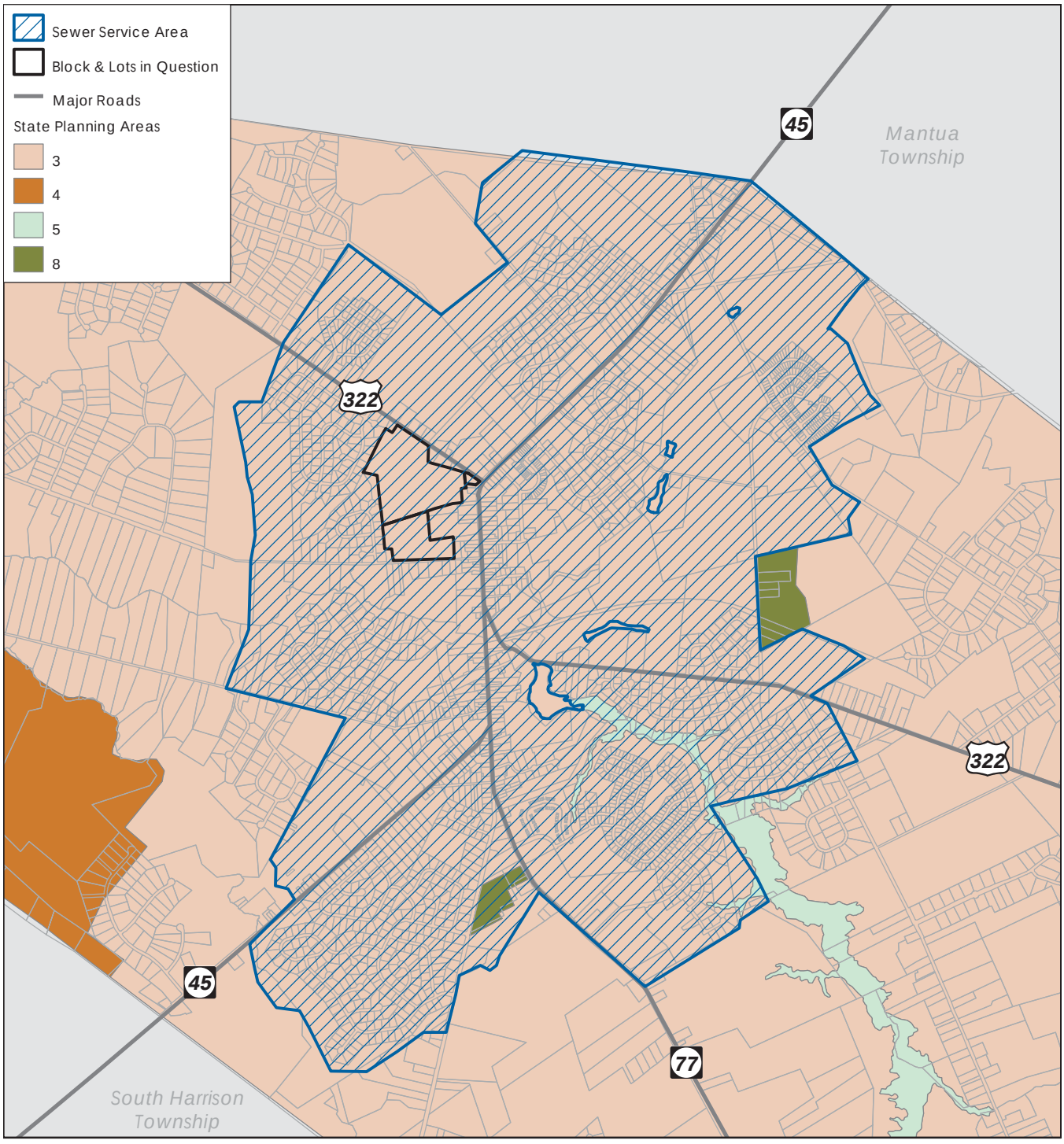
6.2. Block 64. Lots 2, 5, and 21

The "H" criterion, Smart Growth Consistency, applies to Block 64, Lots 2, 5 and 21. The State Planning Act (N.J.S.A. 52:18A-196 et seq.), adopted in 1985, establishes the framework, for State policies and regulations related to smart growth principles. Among the stated objectives in the Act that serve as this framework are the following:

- Protect the natural resources and qualities of the state, including, but not limited to: agricultural development areas, fresh and saltwater wetlands, flood plains, stream corridors, aquifer recharge areas, steep slopes, areas of unique flora and fauna, and areas with scenic, historic, cultural and recreational values;
- Promote development and redevelopment in a manner consistent with sound planning and where infrastructure can be provided at private expense or with reasonable expenditures of public funds. This should not be construed to give preferential treatment to new construction;
- Identify areas for growth, limited growth, agriculture, open space conservation and other appropriate designations that the commission may deem necessary;
- Coordinate planning activities and establish statewide planning objectives in the following areas: land use, housing, economic development, transportation, natural resource conservation, agriculture and farmland retention, recreation, urban and suburban redevelopment, historic preservation, public facilities and services, and intergovernmental coordination.

The New Jersey State Development and Redevelopment Plan, adopted pursuant to the State Planning Act, contains a series of smart growth goals and policies and a map which reflects desired growth patterns. The parcel in question is located in Planning Area 3, Fringe Planning Area, where growth is directed at centers in these areas in order to preserve environmentally sensitive lands and open space.

Figure 5. State Planning Areas & Sewer Service Area



NOTE: Construction of the Route 322 Mullica Hill Bypass is not reflected on this map.

Figure 5 contains a map of State Planning Areas and Sewer Service Areas.

The policy objectives of State Planning Area 3 include the following:

- Focus development and redevelopment in appropriately located and designed Centers to accommodate growth that would otherwise occur in the Environs.
- Provide for a full range of housing choices primarily in Centers at appropriate densities to accommodate projected growth.
- Encourage appropriate redevelopment in existing Centers and existing developed areas that have the potential to become Centers, or in ways that support Center-based development, to accommodate growth that would otherwise occur in the environs.

(2001 State Plan, p. 202, 203)

The Block & Lots in question are both adjacent to and within the Village of Mullica Hill, Harrison Township's historic commercial center. Redevelopment of these parcels supports smart growth principles by directing redevelopment close to an established village area that has walkable characteristics and directing development away from farmland, open space, and sensitive environmental areas. With respect to good Smart Growth, center based practices, and locating development near community amenities and walkable environments, the site or area is an extension of Mullica Hill with walkability into the historic downtown.

Block 64, Lot 2 has frontage along Route 322. Lot 21 has frontage along Woodland Avenue. These lots do not provide adequate access for pedestrians, as they do not have sidewalks and do not support pedestrian movement either on the site or connecting to the Village of Mullica Hill.

Additionally, all lots within the study area, because of their proximity to the Village of Mullica Hill, do not achieve the highest and best use for the area under smart growth principles. Development on this site should align itself with the goals of the State Plan by supporting a walkable community.

Appendix A - 2004 Remedial Action Workplan

REMEDIAL ACTION WORKPLAN

HOLTZHAUSER PROPERTY
BLOCK 64 LOTS 2 & 4
HARRISON TOWNSHIP
GLOUCESTER COUNTY, NEW JERSEY

PREPARED FOR:

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3333 Street Road
One Greenwood Square, Suite 101
Bensalem, Pennsylvania 19020

PREPARED BY:

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DATE: July 2004
30957-02

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APPENDICES

1.0 INTRODUCTION

Environmental Resolutions, Inc. (ERI) has conducted a Phase I Environmental Site Assessment, Site Investigation and Remedial Investigation at the Holtzhauser Property which consists of Block 64 Lots 2 and 4 in Harrison Township, Gloucester County, New Jersey (the Site) and has prepared this Remedial Action Workplan (RAW) for soil that was contaminated by residual pesticides. These investigations were initiated to characterize environmental concerns at the Site and to enable evaluation of applicable remedial actions. On the basis of the investigative findings, recommendations are presented in this RAW for remedial actions so that a Site-Wide Unrestricted Use Letter of No Further Action (NFA) can be obtained from the New Jersey Department of Environmental Protection (NJDEP) prior to the development of the Site for residential purposes. It is planned that this property will be divided into single-family detached residential lots.

The objectives of the investigations were to identify potential areas of environment concern (AOCs), to assess whether contaminants were present at AOCs at concentrations greater than applicable remedial standards, and to evaluate the extent of contamination. Remedial actions are proposed in this report to mitigate contaminant concentrations to below applicable remedial standards so that an NFA can be obtained. The investigations have been completed and remedial actions will be conducted pursuant to N.J.A.C. 7:26E, *Technical Requirements for Site Remediation.*

The Phase I Environmental Site Assessment (Phase I) was conducted in general accordance with Preliminary Assessment (PA) requirements outlined in N.J.A.C. 7:26E-3.1. The Phase I was the first step in the investigative process and was conducted to identify potential AOCs. The Phase I indicated that the only AOCs at the Site were the historic agricultural use and a potential heating oil underground storage tank.

Based on the results of the Phase I, a Site Investigation (SI) was conducted to evaluate surface soils for impacts from topically applied pesticides. A magnetometer survey was conducted to identify the potential underground storage tank. The SI findings indicated that soil contaminated by residual dieldrin pesticides exceeded applicable remedial standards due to historic applications. Indications of a tank were not encountered. The Phase I and SI were included in a Phase I Environmental Site Assessment & Phase II Site Investigation Report dated July 2004. Summaries of those investigations have been included herein.

A Remedial Investigation (RI) of the dieldrin impacted areas has been conducted pursuant to N.J.A.C. 7:26E-4 and included the collection of soil samples for laboratory analysis for pesticides. On the basis of the analytical results, the extent of this contamination has been assessed.

This RAW presents the findings of environmental investigations and proposes a plan for the remediation of contaminated soil. The RAW has been prepared for submittal to the NJDEP to enable approval of the remedial proposal. The intent of the proposed remedial actions is to mitigate pesticide levels to allow unrestricted use of the property.

2.0 PHYSICAL SETTING

2.1 Site Description

The Site is located south of Route 322 west of the intersection of Route 322 with Main Street (Mullica Hill). The Site encompasses approximately thirty-eight (38) acres and contains agricultural fields and small wooded areas. Adjacent uses are residential and agricultural. This location is depicted on the USGS Location Map presented in Appendix A.

2.2 Surface Waters

A small intermittent stream is located through the center of the Site. This stream flows southwest and is a tributary of Raccoon Creek located approximately 1,500 feet southwest of the Site. The topographic gradient of the Site is generally towards the stream.

2.3 Hydrogeologic Setting

The Site is located in a mapped outcrop of the Mount Laurel Formation which is composed of quartz sand with interbedded thin clay beds. Glauconite and feldspar are minor sand constituents. Muscovite and biotite are abundant near the base. The lower part of the formation is a fine- to medium-grained, clayey, dark-gray, glauconitic quartz sand. The formation typically weathers to white or light yellow and locally stains orange brown by iron oxides. Small pebbles are scattered throughout, especially in the west-central area. The Mount Laurel is 33 feet thick from the Roosevelt quadrangle to the Runnemede quadrangle in central New Jersey. Thickness varies in the northern portion of the formation area due, in part, to extensive interfingering of this formation with the underlying Wenonah Formation. The Mount Laurel is gradational into the underlying Wenonah Formation.

3.0 PHASE I ENVIRONMENTAL SITE ASSESSMENT

A Phase I Environmental Site Assessment was prepared by ERI in July 2004. The Phase I generally conforms to Preliminary Assessment requirements of N.J.A.C. 7:26E-3.1. A copy of the report is included under separate cover. The Phase I included a government records search, site reconnaissance, historic aerial photograph review, and an interview with current owners.

The available information indicates that the entire Site has been used for agricultural purposes since prior to 1940. A school was located on the Site since the 1800's until the late 1960's. The Site is currently farmed.

The Phase I concluded that the historic topical application of pesticides and a potential heating oil underground storage tank were identified as the only environmental concerns at the Site. There was a concern that past application of pesticides may have adversely impacted soil. There was also a concern that the potential underground storage tank may have discharged to soil or groundwater.

4.0 SITE INVESTIGATION

A Site Investigation was conducted in December 2003 by collecting ten (10) soil samples (S-1 through S-10) from the historic agricultural areas of the Site. Discrete samples were collected from the upper six inches of soil and were analyzed for arsenic, lead, and PP Pesticides. The sampling locations are shown on the Sample Location Plan included in Appendix B. The soil sample results reported by the laboratory are included on Table 1 in Appendix C.

Arsenic and lead were detected at concentrations below the unrestricted use soil cleanup criteria (uruscc) and restricted use soil cleanup criteria (ruscc). The pesticide dieldrin was detected in nine (9) of the samples at concentrations ranging from 0.019 to 0.250 mg/kg. Five (5) of the samples exceed the uruscc of 0.042 mg/kg. Sample S-7 also exceeds the ruscc of 0.18 mg/kg.

It was recommended that a Remedial Investigation be conducted to assess the extents of the contamination so that remedial alternatives could be evaluated.

The results of a magnetometer survey of the potential heating oil underground storage tank location did not reveal evidence of a tank location. Further assessment of this concern was not recommended.

5.0 REMEDIAL INVESTIGATIONS

Since the soil remedial standard for dieldrin was exceeded, a Remedial Investigation has been conducted to enable characterization of the extent of contamination.

The NJDEP allows compliance averaging of dieldrin concentrations in a contaminated area. Samples S-1 through S-4 were collected from the north half of the Site. It appears that the use of pesticides containing dieldrin was lower in this area than the south half of the Site. The average dieldrin concentration for the north half of the Site is 0.025 mg/kg, which does not exceed the uruscc of 0.042 mg/kg. Compliance averaging of the north half of the Site is proposed.

Additional soil samples were collected at depth from sample location S-3 to assess the distribution of dieldrin in the proposed compliance average area. These samples were analyzed for dieldrin, which was not detected. Dieldrin concentrations exceeding the uruscc have been delineated within the proposed compliance average area.

The concentrations of dieldrin in samples from the south half of the Site were elevated. Twenty-three (23) additional surface samples (S-10 through S-33) and subsurface samples from four (4) soil borings (S-5, S-7, S-8, & S-18) were collected in March and April 2004. The additional surface samples were collected to determine the horizontal extents of the dieldrin contamination. The subsurface samples were collected to enable vertical assessment of the dieldrin contamination. All samples were submitted for dieldrin analysis.

A stainless-steel trowel and hand auger were used to collect and homogenize each sample and to transfer the samples to laboratory-supplied glassware. The samples were placed in an iced cooler and transported under proper chain-of-custody protocol to STL Edison (NJDEP Certification No. 12028) in Edison, New Jersey.

The results reported by the laboratory are included on Table 1 included in Appendix C. Dieldrin was detected in all of the additional surface samples. Dieldrin exceeded the uruscc in thirteen (13) of the samples. The maximum dieldrin concentration at the Site was detected in sample S-21 (0.21 mg/kg). Dieldrin was not detected in the subsurface samples indicating that the dieldrin exceeding the uruscc is limited to the upper six (6) inches of soil.

Based on the analytical results, it appears that the pesticide contamination is limited to a portion of the Site and is limited to the upper six inches of soil.

6.0 BASELINE ECOLOGICAL EVALUATION

Since soil has been adversely impacted, a baseline ecological evaluation has been conducted. Contaminated soils extend over half of the Site and occur at the surface. Since the contaminated areas are farmed, there was a concern that contaminated soils may erode to potential ecological receptors.

A small intermittent stream is located through the center of the Site. The topographic gradient of the Site is generally towards the stream. There was a concern that contaminated soils may have impacted this stream. Sediment samples SED-1 through SED-3 were collected on March 1, 2004 from stream. The samples were biased to areas which would receive the highest rates of runoff from the agricultural fields. The samples were analyzed for dieldrin, pH, Total Organic Carbon (TOC), and grain size by STL Edison. The location of the sediment samples are shown on the Sample Location Plan included in Appendix B.

The results of the analysis indicate that dieldrin was not detected in the samples. The following table summarizes the results reported by the laboratory.

Sample ID	TOC (mg/kg)	pH	Dieldrin (mg/kg)	Soil Type
SED-1	3,010	7.09	Not Detected	Fine-medium sand with gravel, silt, & clay
SED-2	2,420	6.29	Not Detected	Fine-medium silty sand with gravel
SED-3	15,200	6.4	Not Detected	Silty clay with fine sand

The results indicate that the on-site stream has not been impacted. Further assessment of ecological receptors due to the soil contamination is not planned.

7.0 PROPOSED REMEDIAL ACTIONS

The findings of the Site and Remedial Investigations indicate that soil at the Site has been impacted by the residual pesticide dieldrin in excess of the uruscc and ruscc. A remedial action is proposed to mitigate this soil contamination to enable unrestricted use of the Site. Compliance averaging is proposed for the north half of the Site.

Remediation by soil blending is proposed for much of the south half of the Site. The remedial objective will be to mitigate contaminant levels to below the uruscc. The depth of contamination in this area is six (6) inches. It is estimated that eight (8) acre-feet or approximately 13,000 cubic yards of topsoil contains contaminants at concentrations greater than the uruscc.

8.0 REMEDIAL ACTION WORKPLAN

Several remedial alternatives were evaluated prior to the selection of the proposed remedial action. Soil blending is the selected alternative that provided the best balance of short- and long-term effectiveness and cost, while minimizing the threat to human health and the environment. The selected remedy is protective of human health and the environment at the Site and is an on-site permanent remedy.

Several remedial alternatives were evaluated prior to the selection of the proposed remedial actions. Other remedial alternatives that were evaluated included no action, on-site containment and excavation with off-site disposal. These alternatives were not selected for the following reasons:

Because contaminant levels exceed the uruscc, based on the planned residential development of the Site, the no action alternative was considered to be an unacceptable potential liability.

Consolidation of the contaminated soil and on-site containment could be a cost effective remedial alternative. However, engineering controls, a deed notice, and long-term monitoring would be required.

The excavation and off-site disposal alternative was not selected because of the cost. The cost for the alternative was estimated to be greater than $600,000. This alternative was not considered to be economically feasible.

Due to the properties of the contaminants, other options, such as bioremediation, soil treatment, soil washing, and incineration, were judged to be either technically infeasible or not cost effective.

8.1 Applicable Remediation Standards

The NJDEP Soil Cleanup Criteria have been identified as the applicable remediation standards for this Site. Based on the SI and RI Results, dieldrin is the only contaminants of concern. The NJDEP has established a dieldrin uruscc of 0.042 mg/kg and a ruscc of 0.18 mg/kg. Dieldrin has been detected in excess of the both the uruscc and ruscc. An impact-to-ground-water soil cleanup criterion for dieldrin of 50 mg/kg has been established by the NJDEP. This concentration has not been exceeded at the Site.

8.2 Description of Remedial Action

The purpose of soil blending is to reduce direct contact exposure. Contaminated soil can be blended with clean soil within the contaminated area. Blending may be accomplished with clean soil from within or outside the contaminated area to mitigate concentrations to below the uruscc. Blending involves the physical mixing of contaminated soil with uncontaminated soil. Blending can be a cost effective alternative for remediating soil contaminated by residual pesticides.

It is planned that the contaminated topsoil will be blended in-situ with uncontaminated subsoil. The area of remediation is shown on the Remedial Plan included in Appendix D and is approximately sixteen (16) acres in size.

The contamination is limited to the upper six inches of soil within the remedial area. Based on the average dieldrin concentrations, it appears that a 2 to 1 mix will be needed. Since the upper six-inches of topsoil are contaminated, a blending zone of eighteen (18) inches is planned. The upper three inches of soil in hotspot areas at locations S-5, S-7, and S-21 may be regraded to locations within the remedial area with lower dieldrin concentrations. This regrading will facilitate remediation of the higher contaminant concentrations encountered.

Blending will be performed using a deep plow conducted in multiple passes in perpendicular directions. The soil will then be further mixed by disking.

8.3 Area of Remediation

The areas of compliance averaging, remediation, and no action are outlined on the Remedial Plan included in Appendix D. Dieldrin concentrations are also shown on this plan. The compliance average area is approximately eleven (11) acres. The area to be remediated by blending is approximately sixteen (16) acres. Approximately three (3) acres north of the remedial area will not be remediated since dieldrin was detected below the uruscc.

8.4 Remedial Verification Sampling

Soil sampling is planned to verify that blending has mitigated the contamination to below the uruscc. It is planned that verification samples will only be analyzed for dieldrin. It is proposed that remedial verification soil sampling be conducted at a minimum frequency of four (4) samples per acre collected from the upper six (6) inches of blended soil. It is also proposed that samples be collected at six (6) inch intervals through the entire blended depth at one location per four (4) acres of blending. The results for each sample will be compared to the applicable remedial standards (the uruscc). If detections are greater than this remedial standard, the quarter acre area around the sample location will be re-blended and re-tested until the concentrations are less than the remedial standard for each depth interval.

8.5 Cost Estimate

The remedial cost estimate including blending, sampling, analytical, and consulting fees is estimated at $80,000.

8.6 Schedule

It is anticipated that the proposed remediation can be completed within six months of NJDEP approval. A construction start date has not been established.

8.7 Remedial Action Report

A Remedial Action Report will be prepared for submittal to the NJDEP to document remedial activities. The report will include descriptions of the blending methods. Remedial verification results will be presented. It is planned that a proposal for No Further Action will be included.

9.0 LIMITATIONS

This report has been prepared in accordance with generally accepted standards of environmental assessment practice at the time of the investigation. This investigation was conducted solely for the purpose of evaluating environmental conditions with respect to suspected contaminants at the site. Environmental Resolutions, Inc. has reviewed the information provided but makes no guarantees or warranties as to the accuracy or completeness of the information. Environmental Resolutions, Inc. has not conducted its own environmental quality monitoring, analytical or other scientific investigation as part of this assessment, but has instead relied upon data records and reports prepared by others.

APPENDIX A

USGS LOCATION MAP

USGS LOCATION MAP

SOURCE:

PITMAN WEST
USGS QUADRANGLE

SCALE: 1"= 2,000'

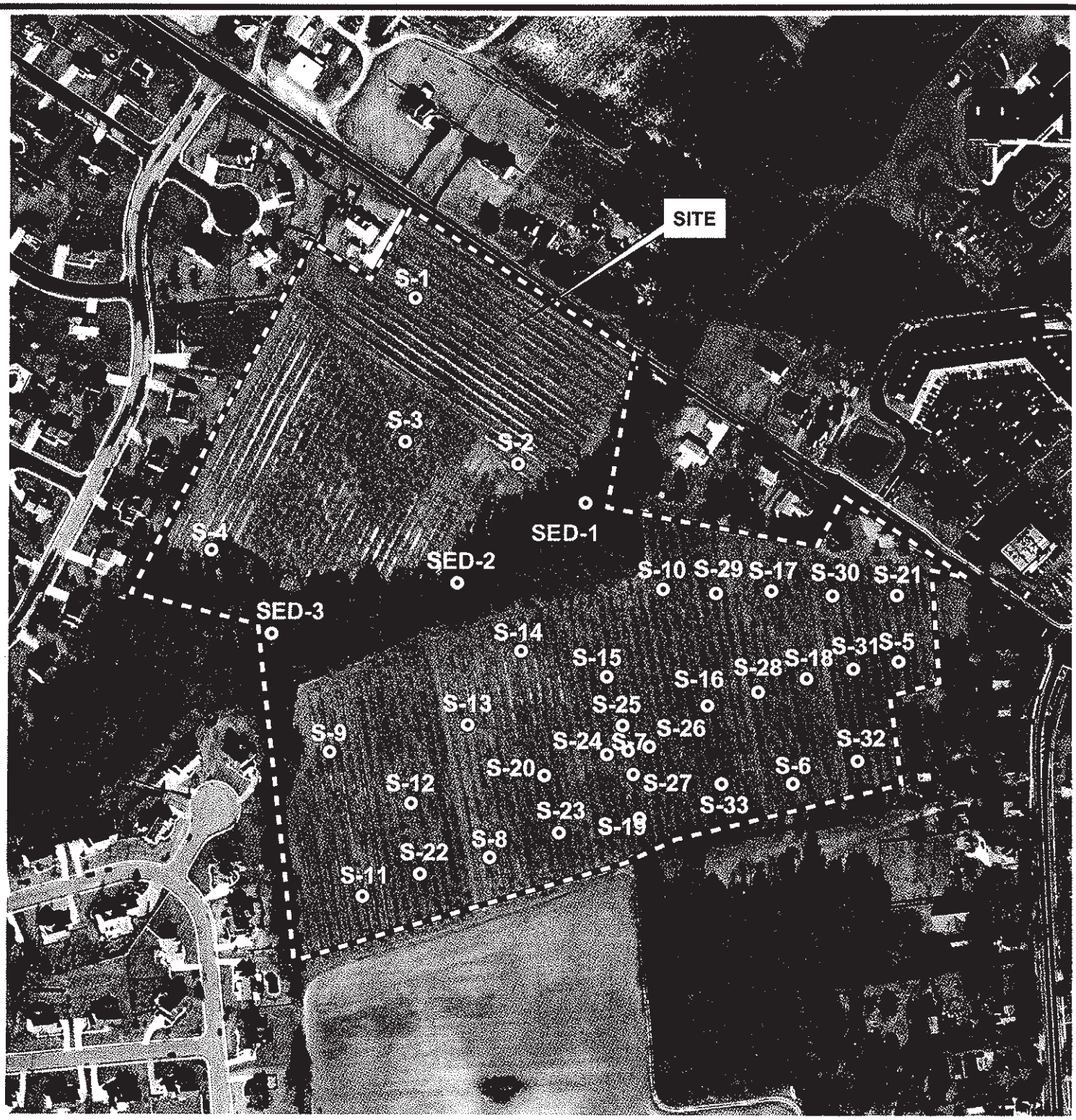
N
W E
S

HOLTZHAUSER PROPERTY
BLOCK 64 LOTS 2 & 4
HARRISON TOWNSHIP
GLOUCESTER COUNTY, NEW JERSEY

ENVIRONMENTAL RESOLUTIONS, INC.

APPENDIX B

SAMPLE LOCATION PLAN



SAMPLE LOCATION PLAN

BASE MAP SOURCE:
USGS
2002 DIGITAL AERIAL PHOTOGRAPH
PHOTO: C15C12

SCALE: 1"= 300'

N
W E
S

HOLTZHAUSER PROPERTY
BLOCK 64 LOTS 2 & 4
HARRISON TOWNSHIP
GLOUCESTER COUNTY, NEW JERSEY

ENVIRONMENTAL RESOLUTIONS, INC.

APPENDIX C

TABLES

ENVIRONMENTAL RESOLUTIONS, INC.
ENGINEERS, SCIENTISTS & PLANNERS
525 Fellowship Road, Suite 300
Mt. Laurel, New Jersey 08054

TABLE 1
LABORATORY RESULTS OF SOIL SAMPLES
HOLTZHAUSER SITE
PRIORITY POLLUTANT PESTICIDES, ARSENIC AND LEAD

Sample ID	S-1	S-2	S-3	S-3B	S-3C	S-4	S-5	S-5B	S-5C	New Jersey Soil Cleanup Criteria		
Lab Sample Number	483075	483076	483077	506448	506449	483078	483079	506450	506451			
Sampling Date	11/24/03	11/24/03	11/24/03	03/01/04	03/01/04	11/24/03	11/24/03	03/01/04	03/01/04	Unrestricted Use Direct Contact	Restricted Use Direct Contact	Impact to Ground Water
Sampling Depth (feet)	0.0-0.5	0.0-0.5	0.0-0.5	0.5-1.0	1.0-1.5	0.0-0.5	0.0-0.5	0.5-1.0	1.0-1.5			
Media	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg			
Pesticides												
Aldrin	0.008 U	0.007 U	0.037 U	NA	NA	0.015 U	0.008 U	NA	NA	0.04	0.17	50
alpha-BHC	0.008 U	0.007 U	0.037 U	NA	NA	0.015 U	0.008 U	NA	NA	NL	NL	NL
beta-BHC	0.008 U	0.007 U	0.037 U	NA	NA	0.015 U	0.008 U	NA	NA	NL	NL	NL
delta-BHC	0.008 U	0.007 U	0.037 U	NA	NA	0.015 U	0.008 U	NA	NA	NL	NL	NL
gamma-BHC(Lindane)	0.008 U	0.007 U	0.037 U	NA	NA	0.015 U	0.008 U	NA	NA	0.52	2.2	50
Chlordane	0.084 U	0.074 U	0.370 U	NA	NA	0.150 U	0.078 U	NA	NA	NL	NL	NL
4,4'-DDD	0.008 U	0.007 U	0.037 U	NA	NA	0.015 U	0.011 P*	NA	NA	3	12	50
4,4'-DDE	0.008 U	0.007 U	0.037 U	NA	NA	0.015 U	0.21	NA	NA	2	9	50
4,4'-DDT	0.013	0.012	0.037 U	NA	NA	0.015 U	0.15	NA	NA	2	9	500
Dieldrin	0.019	0.007 U	0.057	0.0075 U	0.0074 U	0.021	0.18	0.0075 U	0.0082 U	0.042	0.18	50
EndosulfanI	0.008 U	0.007 U	0.037 U	NA	NA	0.015 U	0.008 U	NA	NA	340	6200	50
EndosulfanII	0.008 U	0.048	0.16	NA	NA	0.16	0.008 U	NA	NA	340	6200	50
Endosulfansulfate	0.088	0.3	1.1	NA	NA	0.41	0.12	NA	NA	340	6200	50
Endrin	0.008 U	0.007 U	0.037 U	NA	NA	0.015 U	0.008 U	NA	NA	17	310	50
Endrinaldehyde	0.008 U	0.007 U	0.037 U	NA	NA	0.015 U	0.008 U	NA	NA	NL	NL	NL
Heptachlor	0.008 U	0.007 U	0.037 U	NA	NA	0.015 U	0.008 U	NA	NA	0.15	0.65	50
Heptachlorepoxide	0.008 U	0.007 U	0.037 U	NA	NA	0.015 U	0.008 U	NA	NA	NL	NL	NL
Toxaphene	0.084 U	0.074 U	0.370 U	NA	NA	0.150 U	0.078 U	NA	NA	0.1	0.2	50
Metals												
Arsenic	8.9	7.7	3.7	NA	NA	4.5	8.9	NA	NA	20	20	NL
Lead	17.8	11.0	8.2	NA	NA	6.5	18.8	NA	NA	400	600	NL

outlined = exceeds cleanup criteria

U = not detected

NL = cleanup criteria not listed

B = analyte found in laboratory blank as well as sample

NA = not analyzed

J = compound detected below quantitation limits

P = For dual column analysis, the percent difference between the quantitated concentrations on the two columns is greater than 40%

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HOLTZHAUSER SITE
PRIORITY POLLUTANT PESTICIDES, ARSENIC AND LEAD

Sample ID	S-6	S-7	S-7B	S-7C	S-8	S-8B	S-8C	S-9	S-10	New Jersey Soil Cleanup Criteria		
Lab Sample Number	483080	483081	506452	506453	483082	506454	506455	483083	483084			
Sampling Date	11/24/03	11/24/03	03/01/04	03/01/04	11/24/03	03/01/04	03/01/04	11/24/03	11/24/03	Unrestricted Use Direct Contact	Restricted Use Direct Contact	Impact to Ground Water
Sampling Depth (feet)	0.0-0.5	0.0-0.5	0.5-1.0	1.0-1.5	0.0-0.5	0.5-1.0	1.0-1.5	0.0-0.5	0.0-0.5			
Media	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg			
Pesticides												
Aldrin	0.016 U	0.008 U	NA	NA	0.016 U	NA	NA	0.008 U	0.008 U	0.04	0.17	50
alpha-BHC	0.016 U	0.008 U	NA	NA	0.016 U	NA	NA	0.008 U	0.008 U	NL	NL	NL
beta-BHC	0.016 U	0.008 U	NA	NA	0.016 U	NA	NA	0.008 U	0.008 U	NL	NL	NL
delta-BHC	0.016 U	0.008 U	NA	NA	0.016 U	NA	NA	0.008 U	0.008 U	NL	NL	NL
gamma-BHC(Lindane)	0.016 U	0.008 U	NA	NA	0.016 U	NA	NA	0.008 U	0.008 U	0.52	2.2	50
Chlordane	0.160 U	0.077 U	NA	NA	0.160 U	NA	NA	0.078 U	0.076 U	NL	NL	NL
4,4'-DDD	0.016 U	0.016 P*	NA	NA	0.016 U	NA	NA	0.008 U	0.008 U	3	12	50
4,4'-DDE	0.089	0.19	NA	NA	0.076	NA	NA	0.027	0.013	2	9	50
4,4'-DDT	0.028	0.19	NA	NA	0.048	NA	NA	0.015	0.015	2	9	500
Dieldrin	0.078	0.25	0.0077 U	0.0079 U	0.11	0.0075 U	0.0078 U	0.042	0.021	0.042	0.18	50
Endosulfan I	0.016 U	0.008 U	NA	NA	0.016 U	NA	NA	0.008 U	0.008 U	340	6200	50
Endosulfan II	0.019 J	0.032	NA	NA	0.025	NA	NA	0.008 U	0.008 U	340	6200	50
Endosulfansulfate	0.67	0.29	NA	NA	0.64	NA	NA	0.096	0.1500	340	6200	50
Endrin	0.016 U	0.008 U	NA	NA	0.016 U	NA	NA	0.008 U	0.008 U	17	310	50
Endrinaldehyde	0.016 U	0.008 U	NA	NA	0.016 U	NA	NA	0.008 U	0.008 U	NL	NL	NL
Heptachlor	0.016 U	0.008 U	NA	NA	0.016 U	NA	NA	0.008 U	0.008 U	0.15	0.65	50
Heptachlorepoxide	0.016 U	0.008 U	NA	NA	0.016 U	NA	NA	0.008 U	0.008 U	NL	NL	NL
Toxaphene	0.160 U	0.077 U	NA	NA	0.160 U	NA	NA	0.078 U	0.076 U	0.1	0.2	50
Metals												
Arsenic	6.1	11.0	NA	NA	4.0	NA	NA	3.2	4.2	20	20	NL
Lead	10.2	17.8	NA	NA	13.5	NA	NA	7.6	16.7	400	600	NL

outlined = exceeds cleanup criteria

U = not detected

NL = cleanup criteria not listed

J = compound detected below quantitation limits

B = analyte found in laboratory blank as well as sample

NA = not analyzed

P = For dual column analysis, the percent difference between the quantitated concentrations on the two columns is greater than 40%

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Sample ID	S-11	S-12	S-13	S-14	S-15	S-16	S-17	S-18	S-18B	New Jersey Soil Cleanup Criteria		
Lab Sample Number	506456	506457	506458	506459	506460	506461	506462	506463	522245			
Sampling Date	03/01/04	03/01/04	03/01/04	03/01/04	03/01/04	03/01/04	03/01/04	03/01/04	04/22/04			
Sampling Depth (feet)	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.5-1.0			
Media	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	Unrestricted Use Direct Contact	Restricted Use Direct Contact	Impact to Ground Water
Pesticides												
Aldrin	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.04	0.17	50
alpha-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NL	NL	NL
beta-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NL	NL	NL
delta-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NL	NL	NL
gamma-BHC(Lindane)	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.52	2.2	50
Chlordane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NL	NL	NL
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	3	12	50
4,4'-DDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	2	9	50
4,4'-DDT	NA	NA	NA	NA	NA	NA	NA	NA	NA	2	9	500
Dieldrin	0.096	0.025	0.044	0.027	0.027	0.025	0.097	0.130	0.0077 U	0.042	0.18	50
EndosulfanI	NA	NA	NA	NA	NA	NA	NA	NA	NA	340	6200	50
EndosulfanII	NA	NA	NA	NA	NA	NA	NA	NA	NA	340	6200	50
Endosulfansulfate	NA	NA	NA	NA	NA	NA	NA	NA	NA	340	6200	50
Endrin	NA	NA	NA	NA	NA	NA	NA	NA	NA	17	310	50
Endrinaldehyde	NA	NA	NA	NA	NA	NA	NA	NA	NA	NL	NL	NL
Heptachlor	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.15	0.65	50
Heptachlorepoxide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NL	NL	NL
Toxaphene	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.1	0.2	50
Metals												
Arsenic	NA	NA	NA	NA	NA	NA	NA	NA	NA	20	20	NL
Lead	NA	NA	NA	NA	NA	NA	NA	NA	NA	400	600	NL

outlined = exceeds cleanup criteria

J = compound detected below quantitation limits

U = not detected

B = analyte found in laboratory blank as well as sample

NL = cleanup criteria not listed

NA = not analyzed

P = For dual column analysis, the percent difference between the quantitated concentrations on the two columns is greater than 40%

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HOLTZHAUSER SITE
PRIORITY POLLUTANT PESTICIDES, ARSENIC AND LEAD

Sample ID	S-18C	S-19	S-20	S-21	S-22	S-23	S-24	S-25	S-26	New Jersey Soil Cleanup Criteria		
Lab Sample Number	522246	506464	506465	506466	522233	522234	522235	522236	522237			
Sampling Date	04/22/04	03/01/04	03/01/04	03/01/04	04/22/04	04/22/04	04/22/04	04/22/04	04/22/04			
Sampling Depth (feet)	1.0-1.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5			
Media	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	Unrestricted Use Direct Contact	Restricted Use Direct Contact	Impact to Ground Water
Pesticides												
Aldrin	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.04	0.17	50
alpha-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NL	NL	NL
beta-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NL	NL	NL
delta-BHC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NL	NL	NL
gamma-BHC(Lindane)	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.52	2.2	50
Chlordane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NL	NL	NL
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	3	12	50
4,4'-DDE	NA	NA	NA	NA	NA	NA	NA	NA	NA	2	9	50
4,4'-DDT	NA	NA	NA	NA	NA	NA	NA	NA	NA	2	9	500
Dieldrin	0.0079 U	0.030	0.065	0.210	0.041 P	0.014	0.067	0.053	0.051	0.042	0.18	50
Endosulfan I	NA	NA	NA	NA	NA	NA	NA	NA	NA	340	6200	50
Endosulfan II	NA	NA	NA	NA	NA	NA	NA	NA	NA	340	6200	50
Endosulfansulfate	NA	NA	NA	NA	NA	NA	NA	NA	NA	340	6200	50
Endrin	NA	NA	NA	NA	NA	NA	NA	NA	NA	17	310	50
Endrinaldehyde	NA	NA	NA	NA	NA	NA	NA	NA	NA	NL	NL	NL
Heptachlor	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.15	0.65	50
Heptachlorepoxide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NL	NL	NL
Toxaphene	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.1	0.2	50
Metals												
Arsenic	NA	NA	NA	NA	NA	NA	NA	NA	NA	20	20	NL
Lead	NA	NA	NA	NA	NA	NA	NA	NA	NA	400	600	NL

outlined = exceeds cleanup criteria

U = not detected
NL = cleanup criteria not listed
B = analyte found in laboratory blank as well as sample
NA = not analyzed
J = compound detected below quantitation limits
P = For dual column analysis, the percent difference between the quantitated concentrations on the two columns is greater than 40%

ENVIRONMENTAL RESOLUTIONS, INC.
ENGINEERS, SCIENTISTS & PLANNERS
525 Fellowship Road, Suite 300
Mt. Laurel, New Jersey 08054

TABLE 1
LABORATORY RESULTS OF SOIL SAMPLES
HOLTZHAUSER SITE
PRIORITY POLLUTANT PESTICIDES, ARSENIC AND LEAD

Sample ID	S-27	S-28	S-29	S-30	S-31	S-32	S-33			New Jersey Soil Cleanup Criteria		
Lab Sample Number	522237	522237	522237	522237	522237	522237	522237					
Sampling Date	04/22/04	04/22/04	04/22/04	04/22/04	04/22/04	04/22/04	04/22/04					
Sampling Depth (feet)	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5					
Media	Soil	Soil	Soil	Soil	Soil	Soil	Soil					
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg			Unrestricted Use Direct Contact	Restricted Use Direct Contact	Impact to Ground Water
Pesticides												
Aldrin	NA	NA	NA	NA	NA	NA	NA			0.04	0.17	50
alpha-BHC	NA	NA	NA	NA	NA	NA	NA			NL	NL	NL
beta-BHC	NA	NA	NA	NA	NA	NA	NA			NL	NL	NL
delta-BHC	NA	NA	NA	NA	NA	NA	NA			NL	NL	NL
gamma-BHC(Lindane)	NA	NA	NA	NA	NA	NA	NA			0.52	2.2	50
Chlordane	NA	NA	NA	NA	NA	NA	NA			NL	NL	NL
4,4'-DDD	NA	NA	NA	NA	NA	NA	NA			3	12	50
4,4'-DDE	NA	NA	NA	NA	NA	NA	NA			2	9	50
4,4'-DDT	NA	NA	NA	NA	NA	NA	NA			2	9	500
Dieldrin	0.110	0.036	0.020	0.077	0.096	0.026	0.077			0.042	0.18	50
EndosulfanI	NA	NA	NA	NA	NA	NA	NA			340	6200	50
EndosulfanII	NA	NA	NA	NA	NA	NA	NA			340	6200	50
Endosulfansulfate	NA	NA	NA	NA	NA	NA	NA			340	6200	50
Endrin	NA	NA	NA	NA	NA	NA	NA			17	310	50
Endrinaldehyde	NA	NA	NA	NA	NA	NA	NA			NL	NL	NL
Heptachlor	NA	NA	NA	NA	NA	NA	NA			0.15	0.65	50
Heptachlorepoxide	NA	NA	NA	NA	NA	NA	NA			NL	NL	NL
Toxaphene	NA	NA	NA	NA	NA	NA	NA			0.1	0.2	50
Metals												
Arsenic	NA	NA	NA	NA	NA	NA	NA			20	20	NL
Lead	NA	NA	NA	NA	NA	NA	NA			400	600	NL

outlined = exceeds cleanup criteria

U = not detected
B = analyte found in laboratory blank as well as sample
J = compound detected below quantitation limits
NL = cleanup criteria not listed
NA = not analyzed
P = For dual column analysis, the percent difference between the quantitated concentrations on the two columns is greater than 40%

APPENDIX D

REMEDIAL PLAN

REMEDIAL PLAN

BASE MAP SOURCE:
USGS
2002 DIGITAL AERIAL PHOTOGRAPH
PHOTO: C15C12

SCALE: 1"= 250'

N
W E
S

HOLTZHAUSER PROPERTY
BLOCK 64 LOTS 2 & 4
HARRISON TOWNSHIP
GLOUCESTER COUNTY, NEW JERSEY

ENVIRONMENTAL RESOLUTIONS, INC.

Appendix B - 2013 Environmental Investigation & Evaluation

Marathon

ENGINEERING & ENVIRONMENTAL SERVICES, INC.

January 15, 2013 CAM 009.01

Bob Melvin, A.I.C.P., P.P.,
Group Melvin Design
2 Aquarium Loop #320
Camden, NJ 08103

Re: Redevelopment Area
Holtzhauser Property - Block 64, Lots 2 and 4
Gardiner Property - Block 64, Lot 21
Harrison Township, Gloucester County, New Jersey

Dear Mr. Melvin:

Marathon Engineering & Environmental Services, Inc. ("Marathon") has prepared this letter to demonstrate how the above referenced properties meet the requirements to be names a redevelopment area in accordance with the Local Redevelopment and Housing Law (40A:12A) ("LRHL").

Background

It is our understanding that there are two (2) properties under consideration for the redevelopment area in Harrison Township. The Holtzhauser Property is a 32.28 acre parcel designated as Block 64, Lots 2 and 4 and the Gardiner Property is a 14.74 acre parcel designated as Block 64, Lot 21. The Holtzhauser Property has frontage along US Route 322 and the Gardiner Property has frontage along Woodland Avenue.

Environmental Investigations

An investigation of the Holtzhauser Property was completed in July 2004 that identified the presence of dieldrin contaminated soils. Dieldrin was detected in the surface soils on the Holtzhauser Property at concentrations ranging from 0.019 milligrams per kilogram ("mg/kg") to 0.250 mg/kg. Marathon performed an investigation of the

Gardiner Property in November 2013. No detectable concentrations of dieldrin were identified on the Gardiner Property.

A Remedial Action Workplan, prepared by Environmental Resolutions, Inc ("ERI"), dated July 2004 ("RAW") was prepared for the Holtzhauser Property. The RAW proposed blending dieldrin contaminated surface soils present in the 0 to 6-inch interval with clean soils present in the 6 to 18-inch interval. Marathon concurs with ERI's recommendation that the most feasible solution to address the dieldrin contaminated soil is soil blending; however, Marathon disagrees with the methodology proposed by ERI. Blending contaminated surface soils with deeper subsurface soils is not recommended for the following reasons:

1. For soil blending to be effective and cost efficient, there needs to be a source of clean soil that is free of dieldrin. While ERI's investigation revealed the impacted soils was limited to the top 6-inch interval, it is likely that the soils on the Holtzhauser Property in the 6 to 12-inch interval still contain dieldrin, just at concentrations below the NJDEP's Residential Direct Contact Soil Remediation Standards ("RDCSRS"). Soil blending projects often fail because the "clean" soil still has dieldrin at concentrations below the RDCSRS. In these instances, a much greater quantity of clean soil is required to achieve the targeted RSDSRS than blending with soil that does not contain any detectable concentrations of dieldrin.

2. Blending surface soils with subsurface soils often leaves a fill material that does not contain enough organic matter to me used as top soil, but enough organic matter that it cannot be used as structural fill material.

3. Blending with deeper subsurface soils is difficult because the soils are compacted. The RAW proposes blending to depths of 18 inches to meet the RDCSRS. Typically, blending in-situ is only effective to a depth of 12 inches.

It is our opinion that the only feasible way to effectively blend soils on the Holtzhauser Property is to use clean top soil that is free of dieldrin. It is our opinion that the only viable option to complete blending on the Holtzhauser property is to use clean top soil from the Gardiner Property. This alternative to the RAW is proposed because it eliminates the uncertainty described in Item 1 above because we have sufficient analytical data on Gardiner Property topsoil to know that it is free of dieldrin thus requiring a much smaller quantity of soil to achieve the RDCSRS. Blending top soil on the Holtzhauser Property with the top soil from the Gardiner Property will preserve a natural resource by creating a blended soil that is free of dieldrin while still containing enough organic matter to support vegetation. Further, the preservation of top soil, a natural resource, through the proposed remedial action is consistent with Harrison Township Ordinance § 192-35 - Topsoil Protection. This ordinance reads:

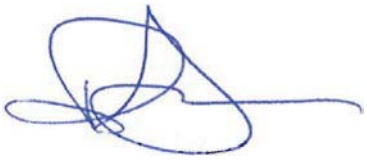
> *No topsoil shall be removed from the site or used as spoil. Topsoil moved during the course of construction shall be redistributed so as to provide at*

least six inches of cover to all areas of the subdivision and shall be stabilized by seeding or planting. Under no circumstances shall any soil *or earth be sold or otherwise removed from the site, unless application is made and approval granted by the Township Engineer.*

If you have any questions, please contact the undersigned at 856-241-9705.

Sincerely,

Marathon Engineering & Environmental Services



Robert L. Carter, Jr., LSRP
Principal Environmental Scientist

P:\CAM00901\Pesticide Investigation\CAM00901_Redevelopment Area 2014-01-15.Doc

Appendix C - Resolution No. 166-2013

RESOLUTION NO. 166-2013

RESOLUTION OF THE MAYOR AND COMMITTEE OF THE TOWNSHIP OF HARRISON AUTHORIZING THE JOINT LAND USE BOARD TO CONDUCT A PRELIMINARY INVESTIGATION TO DETERMINE WHETHER BLOCK 64, LOTS 2, 5 AND 21 ON THE OFFICIAL TAX MAP OF THE TOWNSHIP OF HARRISON QUALIFIES AS AN AREA IN NEED OF REDEVELOPMENT

WHEREAS, N.J.S.A. 40A:12A-6 authorizes the governing body of any municipality by Resolution, to have its Planning Board conduct an investigation to determine whether an area is an area in need of redevelopment; and

WHEREAS, the Township Committee of the Township of Harrison, Gloucester County, has determined that an inquiry should be made to see if a need exists to undertake a preliminary investigation to determine whether a certain area is in need of redevelopment pursuant to State Statute; and

WHEREAS, the land and improvements of the proposed area are known as Block 64, Lots 2, 5 and 21; and

WHEREAS, the Township Committee considers it to be in the best interest of the Township to have its Joint Land Use Board conduct such an investigation regarding said area/property; and

WHEREAS, by reason of obsolescence and/or general deterioration of the improvements, as well as the general condition of the subject property is considered to be such that redevelopment is appropriate and whereby redevelopment would better serve the Township of Harrison.

NOW, THEREFORE, BE IT RESOLVED by the Mayor and Committee of the Township of Harrison, County of Gloucester and State of New Jersey as follows:

1. The Joint Land Use Board of the Township of Harrison is hereby directed to conduct a preliminary investigation to determine whether Block 64, Lots 2, 5 and 21 is an area in need of redevelopment according to the criteria set forth in N.J.S.A. 40A:12A-1, et seq.; and the staff of the Planning Board and its consultants are hereby directed to assist the Planning Board in conducting the blight and/or area in need of redevelopment investigation; and

2. The Township Clerk shall forward a copy of this Resolution to the Chairman of the Joint Land Use Board for immediate action; and

3. The preliminary investigation, once completed, shall be submitted to the Township Committee for review and approval in accordance with the provisions of the Redevelopment and Housing Law, N.J.S.A. 40A:12A-1, et seq.

ADOPTED at a regular meeting of the Mayor and Township Committee of the Township of Harrison, County of Gloucester, State of New Jersey held on August 19, 2013.

TOWNSHIP OF HARRISON

BY: _____
LOUIS F. MANZO, MAYOR

ATTEST:

_____
DIANE L. MALLOY
Municipal Clerk

ROLL CALL VOTE				
COMMITTEE MEMBER	**AYES**	**NAYS**	**ABSTAIN**	**ABSENT**
Manzo	✓			
Clowney	✓			
Diggons	✓			
Heim	✓			
Shearer	✓			

CERTIFICATION

I hereby certify that the above resolution is a true copy of a resolution adopted by the Township Committee of the Township of Harrison, County of Gloucester, State of New Jersey, at a meeting held by the same on August 19, 2013 in the Harrison Township Municipal Building, 114 Bridgeton Pike, Mullica Hill, New Jersey 08062.

_____
DIANE L. MALLOY
Municipal Clerk

Appendix D - Resolution No. 81-2014

RESOLUTION NO. 81-2014

RESOLUTION OF THE MAYOR AND COMMITTEE OF THE TOWNSHIP OF HARRISON AUTHORIZING THE JOINT LAND USE BOARD TO CONDUCT A PRELIMINARY INVESTIGATION TO DETERMINE WHETHER CERTAIN LOTS IN BLOCK 64 ON THE OFFICIAL TAX MAP OF THE TOWNSHIP OF HARRISON QUALIFY AS AN AREA IN NEED OF REDEVELOPMENT

WHEREAS, the Local Redevelopment and Housing Law, N.J.S.A. 40A:12A-1, et seq., provides a mechanism to empower and assist local governments in efforts to promote programs of redevelopment; and

WHEREAS, the Local Redevelopment and Housing Law sets forth a specific procedure for establishing an area in need of redevelopment; and

WHEREAS, N.J.S.A. 40A:12A-6 authorizes the governing body of the municipality by Resolution, to cause its Planning Board to conduct a preliminary investigation to determine whether the proposed area is an area in need of redevelopment according to the criteria set forth in N.J.S.A. 40A:12A-5; and

WHEREAS, the proposed Redevelopment Area (Block 64, Lots 2, 5 and 21) determination shall authorize the municipality to use all those powers provided by the Legislature for use in a Redevelopment Area including eminent domain; and, as such, the Redevelopment Area shall be established and be referred to as a "Condemnation Redevelopment Area"; and

WHEREAS, the Township Committee of the Township of Harrison, Gloucester County, has determined that an investigation and inquiry should be made to see if said area is in need of redevelopment pursuant to the aforementioned State Statute; and

WHEREAS, the Township of Harrison governing body wishes to direct the Joint Land Use Board to undertake a preliminary investigation to determine whether the following properties identified as and consisting of Block 64, Lots 2, 5 and 21 qualify as an area in need of redevelopment pursuant to N.J.S.A. 40A:12A-5; and

WHEREAS, the Township Committee considers it to be in the best interest of the Township to directs its Joint Land Use Board to conduct such an investigation regarding said area/properties.

NOW, THEREFORE, BE IT RESOLVED by the Mayor and Committee of the Township of Harrison, County of Gloucester and State of New Jersey as follows:

1. The Joint Land Use Board of the Township of Harrison is hereby directed to undertake a preliminary investigation to determine whether Block 64, Lots 2, 5 and 21 is a Condemnation Redevelopment Area such that the municipality may use all those powers provided by the Legislature for use in a Redevelopment Area, including the power of eminent domain, according to the criteria set forth in N.J.S.A. 40A:12A-1, et seq.; and

2. The staff of the Joint Land Use Board and its consultants are hereby directed to assist the Joint Land Use Board in conducting the area in need of redevelopment investigation; and

3. The Township Clerk shall forward a copy of this Resolution to the Chairman and Secretary of the Joint Land Use Board for immediate action; and

4. The preliminary investigation, once completed, shall be submitted to the Township Committee for review and approval in accordance with the provisions of the Redevelopment and Housing Law, N.J.S.A. 40A:12A-1, et seq.

ADOPTED at a regular meeting of the Mayor and Township Committee of the Township of Harrison, County of Gloucester, State of New Jersey held on March 5, 2014.

TOWNSHIP OF HARRISON

BY: _____
LOUIS F. MANZO, MAYOR

ATTEST:

_____
DIANE L. MALLOY
Municipal Clerk

ROLL CALL VOTE				
COMMITTEE MEMBER	**AYES**	**NAYS**	**ABSTAIN**	**ABSENT**
Manzo	✓			
Clowney	✓			
Diggons	✓			
Heim	✓			
Shearer				✓

CERTIFICATION

I hereby certify that the above resolution is a true copy of a resolution adopted by the Township Committee of the Township of Harrison, County of Gloucester, State of New Jersey, at a meeting held by the same on March 5, 2014 in the Harrison Township Municipal Building, 114 Bridgeton Pike, Mullica Hill, New Jersey 08062.

_____
DIANE L. MALLOY
Municipal Clerk