

IV. EVALUATION OF ALTERNATIVES

Throughout the project development process and following NEPA, the Master Plan Alternative was subjected to extensive resource avoidance and minimization analysis for natural, community and cultural resources. As a result, many alternatives and options were developed in consultation with resource agency representatives and the public. This section presents a summary of the preliminary impact analysis for a broad range of alternatives. This information has been compiled and summarized and is presented in *Table IV-1: Summary of Impacts Preliminary Alternatives Analysis* (The details of the wetlands avoidance and minimization efforts are presented in *Appendix B*).

As a result of this analysis, the following alternatives have been dismissed from further consideration;

- Nemours Historic District Avoidance Alternative (Blue Ball Barn and Bird-Husbands House)
- Nemours Historic District Minimization Alternative (Blue Ball Barn and Bird-Husbands House)
- Nemours Historic District Avoidance Alternative (William Murphy House)
- Murphy House Minimization Alternative
- Porter Reservoir Avoidance Alternative
- One Rock Manor Avenue Avoidance Alternative
- J.R. Weldin Archaeological Site Minimization Alternative
- J.R. Weldin Archaeological Site Avoidance Alternative A
- J.R. Weldin Archaeological Site Avoidance Alternative B1
- J.R. Weldin Archaeological Site Avoidance Alternative C
- Ronald McDonald House Archaeological Site Avoidance Alternative

Additionally, as a result of this analysis, the following alternatives have been carried forward for further consideration;

- No-Build Alternative
- J.R. Weldin Archaeological Site Avoidance Alternative B (as Eastpark Road alignment B)
- Master Plan Modified Alternative with two (2) alignment alternatives for Eastpark Drive.

A detailed analysis of the impacts of the No-Build and Preferred Alternative (with Options) is presented in *Chapter III: Project Alternatives*.

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Table IV-1: Summary of Impacts (Preliminary Alternatives Analysis)

Alternative:	Satisfies Project Purpose and Need	Community Cohesion	Aquatic Resource Impacts	Terrestrial Impacts	Noise Impacts	Historic Resource Impacts	Arch. Resource Impacts	Conclusion/Status
No Build Alternative (Figure 9)	No	<ul style="list-style-type: none"> Inconsistent with Master Plan- no improvements would be implemented. Existing land use unaffected. Inconsistent with future economic development. No residential/business displacements. Goals for completion of bicycle and Greenway Trail would not be met. 	<ul style="list-style-type: none"> Existing wetlands would not be affected. Stream/waterways would not be altered. 	<ul style="list-style-type: none"> In the No-Build condition, there would be no affect to the forestland in the project. Agricultural land in the project area would not be affected under the No Build Alternative. 	<ul style="list-style-type: none"> In the No Build condition, noise levels in the area would be expected to increase. 	<ul style="list-style-type: none"> No Effect 	<ul style="list-style-type: none"> No Effect 	<ul style="list-style-type: none"> Carried forward for further analysis.
Master Plan Alternative (Figure 10)	Yes	<ul style="list-style-type: none"> Would result in no residential displacements and one business displacement. Consistent with future economic development plans. Goals for completion of bicycle and Greenway Trail met. Consistent with Master Plan and recreational facility development planned for Weldin Tract. 	<ul style="list-style-type: none"> Approximately 1.12 acres of wetlands will be impacted through new roadway crossings. A total of 595 linear feet of waterway will be affected through new roadway crossings and structures. Environmental enhancement planned via storm water management, stream restoration and wetland mitigation. 	<ul style="list-style-type: none"> 7 acres of forestland from the Alapocas Tract, AstraZeneca Triangle and the Weldin Tract would be lost. 24 acres of fallow agricultural field from the Alapocas Tract, AstraZeneca Triangle and the Weldin Tract would be lost. 	<p>4 areas that warrant abatement consideration:</p> <ul style="list-style-type: none"> Deerhurst Community (abatement not feasible) Ronald McDonald House (design being evaluated) One Rock Manor Avenue (design being evaluated) Blue Ball Barn (abatement not feasible) 	<p>Nemours Historic District</p> <ul style="list-style-type: none"> A 12.8-acre acquisition of property would be required. Visual, audible and atmospheric impacts. No contributing structures or buildings to the historic district would be physically altered. A .06-acre encroachment on the <i>Murphy House</i> historic property would be required. The noise level would increase 2.8 decibels. No physical impact to the <i>Blue Ball Barn</i>. The noise level would not increase. No physical impact to the <i>Bird-Husbands House</i>. The noise level would increase 3.6 decibels. Renovation and adaptive reuse proposed for the <i>Murphy House</i> and <i>Blue Ball Barn</i>. <p>Porter Reservoir</p> <ul style="list-style-type: none"> A 0.7-acre acquisition of property would be required. The noise level would increase 3.5 decibels. The existing entrance would be relocated to an access road north of the reservoir. The entrance pillars would remain at the existing entrance, though moved to a safe distance from U.S. 202. <p>One Rock Manor Avenue</p> <ul style="list-style-type: none"> A 0.18-acre acquisition of property would be required. The noise level would increase 2.3 decibels. 	<p>J.R. Weldin Archaeological Site</p> <ul style="list-style-type: none"> All of the 18th century ruins and a portion of the 19th century ruins would be impacted (data recovery proposed). Approximately 47% of the site, which contains significant information, would be physically impacted. <p>Ronald McDonald House Archaeological Site</p> <ul style="list-style-type: none"> Most of the site would be destroyed (data recovery proposed). 	<ul style="list-style-type: none"> Master Plan Alternative was subjected to detailed minimization analysis (See Master Plan Modified Alternative).

Table IV-1: Summary of Impacts (Preliminary Alternatives Analysis)

Alternative:	Satisfies Project Purpose and Need	Community Cohesion	Aquatic Resource Impacts	Terrestrial Impacts	Noise Impacts	Historic Resource Impacts	Arch. Resource Impacts	Conclusion/Status
Nemours Historic District Avoidance Alternative (Figure 11)	Yes	<ul style="list-style-type: none"> Inconsistent with Master Plan. Loss of existing and proposed stormwater management facilities. Removes Westpark Drive and Greenways connection. Property loss to AstraZeneca. Displacement of Weldin-Husbands House. Displacement of Kehtron and 4 Capano Buildings from Brandywine Office Complex. Adverse impacts to proposed recreation facilities as a result of Eastpark Drive Configuration. 	<ul style="list-style-type: none"> 0.08 less impacts to the wetlands along the Alapocas corridor. No Additional impacts to Alapocas Run. Environmental enhancement planned via storm water management, stream restoration and wetland mitigation. 	<ul style="list-style-type: none"> In the No-Build condition, there would be no affect to the forestland in the project. Agricultural land in the project area would not be affected under the No Build Alternative. 	<p>4 areas that warrant abatement consideration:</p> <ul style="list-style-type: none"> Deerhurst Community (abatement not feasible) Ronald McDonald House (design being evaluated) One Rock Manor Avenue (design being evaluated) Blue Ball Barn (abatement not feasible) 	<p>Nemours Historic District</p> <ul style="list-style-type: none"> No acreage would be acquired south of Rockland Road. Visual, audible and atmospheric impacts. No contributing structures or buildings to the historic district would be physically altered. A .06-acre encroachment on the <i>Murphy House</i> historic property would be required. The noise level would increase 2.8 decibels. No physical impact to the <i>Blue Ball Barn</i>. The noise level would not increase. No physical impact to the <i>Bird-Husbands House</i>. The noise level would increase 3.6 decibels. Renovation and adaptive reuse proposed for the Murphy House and Blue Ball Barn. <p>Porter Reservoir</p> <ul style="list-style-type: none"> A 0.7-acre acquisition of property would be required. The noise level would increase 3.5 decibels. The existing entrance would be relocated to an access road north of the reservoir. The entrance pillars would remain at the existing entrance, though moved to a safe distance from U.S. 202. <p>One Rock Manor Avenue</p> <ul style="list-style-type: none"> A 0.18-acre acquisition of property would be required. The noise level would increase 2.3 decibels. 	<p>J.R. Weldin Archaeological Site</p> <ul style="list-style-type: none"> No Effect <p>Ronald McDonald House Archaeological Site</p> <ul style="list-style-type: none"> Most of the site would be destroyed (data recovery proposed). 	<ul style="list-style-type: none"> Dismissed due to severe business property impacts and economic loss to area.

Table IV-1: Summary of Impacts (Preliminary Alternatives Analysis)

Alternative:	Satisfies Project Purpose and Need	Community Cohesion	Aquatic Resource Impacts	Terrestrial Impacts	Noise Impacts	Historic Resource Impacts	Arch. Resource Impacts	Conclusion/Status
Murphy House Avoidance Alternative (Figure 12)	Yes	<ul style="list-style-type: none"> Would result in no residential displacements and one business displacement. Consistent with future economic development plans. Goals for completion of bicycle and Greenway Trail met. Consistent with Master Plan and recreational facility development planned for Weldin Tract. 	<ul style="list-style-type: none"> Approximately 1.12 acres of wetlands will be impacted through new roadway crossings. A total of 595 linear feet of waterway will be affected through new roadway crossings and structures. Environmental enhancement planned via storm water management, stream restoration and wetland mitigation. 	<ul style="list-style-type: none"> 7 acres of forestland from the Alapocas Tract, AstraZeneca Triangle and the Weldin Tract would be lost. 24 acres of fallow agricultural field from the Alapocas Tract, AstraZeneca Triangle and the Weldin Tract would be lost. 	<p>4 areas that warrant abatement consideration:</p> <ul style="list-style-type: none"> Deerhurst Community (abatement not feasible) Ronald McDonald House (design being evaluated) One Rock Manor Avenue (design being evaluated) Blue Ball Barn (abatement not feasible) 	<p>Nemours Historic District</p> <ul style="list-style-type: none"> A 12.8-acre acquisition of property would be required. Visual, audible and atmospheric impacts. Physical alteration of the wall and gateway of the Nemours Mansion (contributing features of the Nemours Historic District) No encroachment on the <i>Murphy House</i> historic property would be required. The noise level would increase 2.8 decibels. No physical impact to the <i>Blue Ball Barn</i>. The noise level would not increase. No physical impact to the <i>Bird-Husbands House</i>. The noise level would increase 3.6 decibels. Renovation and adaptive reuse proposed for the Murphy House and Blue Ball Barn. <p>Porter Reservoir</p> <ul style="list-style-type: none"> A 0.7-acre acquisition of property would be required. The noise level would increase 3.5 decibels. The existing entrance would be relocated to an access road north of the reservoir. The entrance pillars would remain at the existing entrance, though moved to a safe distance from U.S. 202. <p>One Rock Manor Avenue</p> <ul style="list-style-type: none"> A 0.18-acre acquisition of property would be required. The noise level would increase 2.3 decibels. 	<p>J.R. Weldin Archaeological Site</p> <ul style="list-style-type: none"> All of the 18th century ruins and a portion of the 19th century ruins would be impacted (data recovery proposed). Approximately 47% of the site, which contains significant information, would be physically impacted. <p>Ronald McDonald House Archaeological Site</p> <ul style="list-style-type: none"> Most of the site would be destroyed (data recovery proposed). 	<ul style="list-style-type: none"> Dismissed due to severe impacts on Nemours Historic District south of Rockland Road (A.I. duPont wall and gateway)

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Alternative:	Satisfies Project Purpose and Need	Community Cohesion	Aquatic Resource Impacts	Terrestrial Impacts	Noise Impacts	Historic Resource Impacts	Arch. Resource Impacts	Conclusion/Status
Porter Reservoir Avoidance Alternative (Figure 13)	Yes, however does not satisfy safety objectives of access management on U.S. 202.	<ul style="list-style-type: none"> • Would result in no residential displacements and one business displacement. • Consistent with future economic development plans. • Goals for completion of bicycle and Greenway Trail met. • Consistent with Master Plan and recreational facility development planned for Weldin Tract. 	<ul style="list-style-type: none"> • Approximately 1.12 acres of wetlands will be impacted through new roadway crossings. • A total of 595 linear feet of waterway will be affected through new roadway crossings and structures. • Environmental enhancement planned via storm water management, stream restoration and wetland mitigation. 	<ul style="list-style-type: none"> • 7 acres of forestland from the Alapocas Tract, AstraZeneca Triangle and the Weldin Tract would be lost. • 24 acres of fallow agricultural field from the Alapocas Tract, AstraZeneca Triangle and the Weldin Tract would be lost. 	<p>4 areas that warrant abatement consideration:</p> <ul style="list-style-type: none"> • Deerhurst Community (abatement not feasible) • Ronald McDonald House (design being evaluated) • One Rock Manor Avenue (design being evaluated) ▪ Blue Ball Barn (abatement not feasible) 	<p>Nemours Historic District</p> <ul style="list-style-type: none"> • A 12.8-acre acquisition of property would be required. • Visual, audible and atmospheric impacts. • No contributing structures or buildings to the historic district would be physically altered. • A .06-acre encroachment on the <i>Murphy House</i> historic property would be required. The noise level would increase 2.8 decibels. • No physical impact to the <i>Blue Ball Barn</i>. Loss of the milk house associated with the barn. The noise level would not increase. • No physical impact to the <i>Bird-Husbands House</i>. The noise level would increase 3.6 decibels. • Renovation and adaptive reuse proposed for the <i>Murphy House</i> and <i>Blue Ball Barn</i>. <p>Porter Reservoir</p> <ul style="list-style-type: none"> • No acquisition of property would be required. The noise level would increase 3.5 decibels. • The existing entrance would be relocated to an access road north of the reservoir. The entrance pillars would remain at the existing entrance, though moved to a safe distance from U.S. 202. <p>One Rock Manor Avenue</p> <ul style="list-style-type: none"> • The 0.18-acre acquisition of property would be increased due to the shift of U.S. 202 away from the reservoir. The noise level would increase 2.3 decibels. 	<p>J.R. Weldin Archaeological Site</p> <ul style="list-style-type: none"> • All of the 18th century ruins and a portion of the 19th century ruins would be impacted (data recovery proposed). • Approximately 47% of the site, which contains significant information, would be physically impacted. <p>Ronald McDonald House Archaeological Site</p> <ul style="list-style-type: none"> • Most of the site would be physically destroyed. 	<ul style="list-style-type: none"> • Dismissed due to disproportionate harm to One Rock Manor Avenue and Blue Ball Barn.

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Alternative:	Satisfies Project Purpose and Need	Community Cohesion	Aquatic Resource Impacts	Terrestrial Impacts	Noise Impacts	Historic Resource Impacts	Arch. Resource Impacts	Conclusion/Status
One Rock Manor Avoidance Alternative (Figure 14)	Yes	<ul style="list-style-type: none"> There are potential impacts to the Porter reservoir facilities, resulting in direct impacts to the water supply for the City of Wilmington. Would result in no residential displacements and one business displacement. Consistent with future economic development plans. Goals for completion of bicycle and Greenway Trail met. Consistent with Master Plan and recreational facility development planned for Weldin Tract. 	<ul style="list-style-type: none"> Approximately 1.12 acres of wetlands will be impacted through new roadway crossings. A total of 595 linear feet of waterway will be affected through new roadway crossings and structures. Environmental enhancement planned via storm water management, stream restoration and wetland mitigation. 	<ul style="list-style-type: none"> 7 acres of forestland from the Alapocas Tract, AstraZeneca Triangle and the Weldin Tract would be lost. 24 acres of fallow agricultural field from the Alapocas Tract, AstraZeneca Triangle and the Weldin Tract would be lost. 	<p>4 areas that warrant abatement consideration:</p> <ul style="list-style-type: none"> Deerhurst Community (abatement not feasible) Ronald McDonald House (design being evaluated) One Rock Manor Avenue (design being evaluated) Blue Ball Barn (abatement not feasible) 	<p>Nemours Historic District</p> <ul style="list-style-type: none"> A 12.8-acre acquisition of property would be required. Visual, audible and atmospheric impacts. No contributing structures or buildings to the historic district would be physically altered. A 0.6-acre encroachment on the <i>Murphy House</i> historic property would be required. The noise level would increase 2.8 decibels. No physical impact to the <i>Blue Ball Barn</i>. The noise level would not increase. No physical impact to the <i>Bird-Husbands House</i>. The noise level would increase 3.6 decibels. Renovation and adaptive reuse proposed for the <i>Murphy House</i> and <i>Blue Ball Barn</i>. <p>Porter Reservoir</p> <ul style="list-style-type: none"> The 0.7-acre acquisition of property would be increased due to the shift of U.S. 202 away from One Rock Manor Avenue. In addition, structural impact to the reservoir may result. The noise level would increase 3.5 decibels. The existing entrance would be relocated to an access road north of the reservoir. The entrance pillars would remain at the existing entrance, though moved to a safe distance from U.S. 202. <p>One Rock Manor Avenue</p> <ul style="list-style-type: none"> No acquisition of property would be required. The noise level would increase 2.3 decibels. 	<p>J.R. Weldin Archaeological Site</p> <ul style="list-style-type: none"> All of the 18th century ruins and a portion of the 19th century ruins would be impacted (data recovery proposed). Approximately 47% of the site, which contains significant information, would be physically impacted. <p>Ronald McDonald House Archaeological Site</p> <ul style="list-style-type: none"> Most of the site would be physically destroyed (data recovery proposed). 	<ul style="list-style-type: none"> Dismissed due to disproportionate harm to Porter Reservoir.

Table IV-1: Summary of Impacts (Preliminary Alternatives Analysis)

Alternative:	Satisfies Project Purpose and Need	Community Cohesion	Aquatic Resource Impacts	Terrestrial Impacts	Noise Impacts	Historic Resource Impacts	Arch. Resource Impacts	Conclusion/Status
J.R. Weldin Archaeological Site Avoidance Alternative A (Figure 15)	Yes	<ul style="list-style-type: none"> Inconsistent with Master Plan-affects proposed park features and development. Loss of one (1) multi-use recreational field. Isolation of the planned viewing/picnic area from the proposed Weldin ruins interpretive site. Loss of existing mature vegetative hedgerow buffer area. Loss of needed parking. 	<ul style="list-style-type: none"> Approximately 1.12 acres of wetlands will be impacted through new roadway crossings. A total of 595 linear feet of waterway will be affected through new roadway crossings and structures. Environmental enhancement planned via storm water management, stream restoration and wetland mitigation. 	<ul style="list-style-type: none"> 7 acres of forestland from the Alapocas Tract, AstraZeneca Triangle and the Weldin Tract would be lost. 24 acres of fallow agricultural field from the Alapocas Tract, AstraZeneca Triangle and the Weldin Tract would be lost. 	<p>4 areas that warrant abatement consideration:</p> <ul style="list-style-type: none"> Deerhurst Community (abatement not feasible) Ronald McDonald House (design being evaluated) One Rock Manor Avenue (design being evaluated) Blue Ball Barn (abatement not feasible) 	<p>Nemours Historic District</p> <ul style="list-style-type: none"> A 12.8-acre acquisition of property would be required. Visual, audible and atmospheric impacts. No contributing structures or buildings to the historic district would be physically altered. A .06-acre encroachment on the <i>Murphy House</i> historic property would be required. The noise level would increase 2.8 decibels. No physical impact to the <i>Blue Ball Barn</i>. The noise level would not increase. No physical impact to the <i>Bird-Husbands House</i>. The noise level would increase 3.6 decibels. Renovation and adaptive reuse proposed for the <i>Murphy House</i> and <i>Blue Ball Barn</i>. <p>Porter Reservoir</p> <ul style="list-style-type: none"> A 0.7-acre acquisition of property would be required. The noise level would increase 3.5 decibels. The existing entrance would be relocated to an access road north of the reservoir. The entrance pillars would remain at the existing entrance, though moved to a safe distance from U.S. 202. <p>One Rock Manor Avenue</p> <ul style="list-style-type: none"> A 0.18-acre acquisition of property would be required. The noise level would increase 2.3 decibels. 	<p>J.R. Weldin Archaeological Site</p> <ul style="list-style-type: none"> None of the 18th or 19th century ruins will be impacted. Approximately 15% of the site, which does not contain significant information, would still be physically impacted. <p>Ronald McDonald House Archaeological Site</p> <ul style="list-style-type: none"> Most of the site would be physically destroyed (data recovery proposed). 	<ul style="list-style-type: none"> Dismissed due to adverse impacts on proposed park/recreation facilities. Weldin Archaeological Site would be intersected with two (2) roadway areas. No management program for the site.

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J.R. Weldin Archaeological Site Avoidance Alternative B (North of Hedgerow) (Figure 16)	Yes	<ul style="list-style-type: none"> Appears inconsistent with Master Plan-separates park facilities by a local (park) roadway), leading to safety and access problems. Does not meet the goal of keeping local roads separated from park features. Bisects the park features and driving range, separating many of the major components of the recreational facility. May create additional stormwater management problems in the Shellpot Creek drainage basin and adjacent neighborhoods. Additional park layout studies necessary. 	<ul style="list-style-type: none"> Approximately 1.12 acres of wetlands will be impacted through new roadway crossings. A total of 595 linear feet of waterway will be affected through new roadway crossings and structures. Environmental enhancement planned via storm water management, stream restoration and wetland mitigation. 	<ul style="list-style-type: none"> 7 acres of forestland from the Alapocas Tract, AstraZeneca Triangle and the Weldin Tract would be lost. 24 acres of fallow agricultural field from the Alapocas Tract, AstraZeneca Triangle and the Weldin Tract would be lost. 	<p>4 areas that warrant abatement consideration:</p> <ul style="list-style-type: none"> Deerhurst Community (abatement not feasible) Ronald McDonald House (design being evaluated) One Rock Manor Avenue (design being evaluated) Blue Ball Barn (abatement not feasible) 	<p>Nemours Historic District</p> <ul style="list-style-type: none"> A 12.8-acre acquisition of property would be required. Visual, audible and atmospheric impacts. No contributing structures or buildings to the historic district would be physically altered. A .06-acre encroachment on the <i>Murphy House</i> historic property would be required. The noise level would increase 2.8 decibels. No physical impact to the <i>Blue Ball Barn</i>. The noise level would not increase. No physical impact to the <i>Bird-Husbands House</i>. The noise level would increase 3.6 decibels. Renovation and adaptive reuse proposed for the <i>Murphy House</i> and <i>Blue Ball Barn</i>. <p>Porter Reservoir</p> <ul style="list-style-type: none"> A 0.7-acre acquisition of property would be required. The noise level would increase 3.5 decibels. The existing entrance would be relocated to an access road north of the reservoir. The entrance pillars would remain at the existing entrance, though moved to a safe distance from U.S. 202. <p>One Rock Manor Avenue</p> <ul style="list-style-type: none"> A 0.18-acre acquisition of property would be required. The noise level would increase 2.3 decibels. 	<p>J.R. Weldin Archaeological Site</p> <ul style="list-style-type: none"> None of the 18th or the 19th century ruins would be impacted. Approximately 10% of the site, which does not contain significant information, would still be physically impacted (data recovery proposed). <p>Ronald McDonald House Archaeological Site</p> <ul style="list-style-type: none"> Most of the site would be physically destroyed (data recovery proposed). 	<ul style="list-style-type: none"> Carried forward as Option B with the Master Plan Modified Alternative.

Table IV-1: Summary of Impacts (Preliminary Alternatives Analysis)

Alternative:	Satisfies Project Purpose and Need	Community Cohesion	Aquatic Resource Impacts	Terrestrial Impacts	Noise Impacts	Historic Resource Impacts	Arch. Resource Impacts	Conclusion/Status
J.R. Weldin Archaeological Site Avoidance Alternative B1 (South of Hedgerow) (Figure 17)	Yes	<ul style="list-style-type: none"> Appears inconsistent with Master Plan-separates park facilities by a local (park) roadway), leading to safety and access problems. Does not meet the goal of keeping local roads separated from park features. Bisects the park features and driving range, separating many of the major components of the recreational facility. May create additional stormwater management problems in the Shellpot Creek drainage basin and adjacent neighborhoods. Additional park layout studies necessary. 	<ul style="list-style-type: none"> Approximately 1.12 acres of wetlands will be impacted through new roadway crossings. A total of 595 linear feet of waterway will be affected through new roadway crossings and structures. Environmental enhancement planned via storm water management, stream restoration and wetland mitigation. 	<ul style="list-style-type: none"> 7 acres of forestland from the Alapocas Tract, AstraZeneca Triangle and the Weldin Tract would be lost. 24 acres of fallow agricultural field from the Alapocas Tract, AstraZeneca Triangle and the Weldin Tract would be lost. 	<p>4 areas that warrant abatement consideration:</p> <ul style="list-style-type: none"> Deerhurst Community (abatement not feasible) Ronald McDonald House (design being evaluated) One Rock Manor Avenue (design being evaluated) Blue Ball Barn (abatement not feasible) 	<p>Nemours Historic District</p> <ul style="list-style-type: none"> A 12.8-acre acquisition of property would be required. Visual, audible and atmospheric impacts. No contributing structures or buildings to the historic district would be physically altered. A .06-acre encroachment on the <i>Murphy House</i> historic property would be required. The noise level would increase 2.8 decibels. No physical impact to the <i>Blue Ball Barn</i>. The noise level would not increase. No physical impact to the <i>Bird-Husbands House</i>. The noise level would increase 3.6 decibels. Renovation and adaptive reuse proposed for the <i>Murphy House</i> and <i>Blue Ball Barn</i>. <p>Porter Reservoir</p> <ul style="list-style-type: none"> A 0.7-acre acquisition of property would be required. The noise level would increase 3.5 decibels. The existing entrance would be relocated to an access road north of the reservoir. The entrance pillars would remain at the existing entrance, though moved to a safe distance from U.S. 202. <p>One Rock Manor Avenue</p> <ul style="list-style-type: none"> A 0.18-acre acquisition of property would be required. The noise level would increase 2.3 decibels. 	<p>J.R. Weldin Archaeological Site</p> <ul style="list-style-type: none"> None of the 18th or the 19th century ruins would be impacted. Approximately 10% of the site, which does not contain significant information, would still be physically impacted (data recovery proposed). <p>Ronald McDonald House Archaeological Site</p> <ul style="list-style-type: none"> Most of the site would be physically destroyed (data recovery proposed). 	<ul style="list-style-type: none"> Dismissed due to impacts to proposed golf course expansion and reduction of land required for storm water management facilities.

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Alternative:	Satisfies Project Purpose and Need	Community Cohesion	Aquatic Resource Impacts	Terrestrial Impacts	Noise Impacts	Historic Resource Impacts	Arch. Resource Impacts	Conclusion/Status
J.R. Weldin Archaeological Site Avoidance Alternative C (South Alignment) (Figure 18)	Yes	<ul style="list-style-type: none"> Appears inconsistent with the Master Plan because it requires the use of Carruthers Lane. And separates park facilities by a local (park) roadway), leading to safety and access problems. Eastpark Drive would be placed between the Porter Reservoir and the proposed driving range, separating the facilities. May create additional stormwater management problems in the Shellpot Creek drainage basin and adjacent neighborhoods. Impacts proposed golf course expansion Additional park layout studies necessary. 	<ul style="list-style-type: none"> Approximately 1.12 acres of wetlands will be impacted through new roadway crossings. A total of 595 linear feet of waterway will be affected through new roadway crossings and structures. Environmental enhancement planned via storm water management, stream restoration and wetland mitigation. 	<ul style="list-style-type: none"> 7 acres of forestland from the Alapocas Tract, AstraZeneca Triangle and the Weldin Tract would be lost. 24 acres of fallow agricultural field from the Alapocas Tract, AstraZeneca Triangle and the Weldin Tract would be lost. 	<p>4 areas that warrant abatement consideration:</p> <ul style="list-style-type: none"> Deerhurst Community (abatement not feasible) Ronald McDonald House (design being evaluated) One Rock Manor Avenue (design being evaluated) Blue Ball Barn (abatement not feasible) 	<p>Nemours Historic District</p> <ul style="list-style-type: none"> A 12.8-acre acquisition of property would be required. Visual, audible and atmospheric impacts. No contributing structures or buildings to the historic district would be physically altered. A .06-acre encroachment on the <i>Murphy House</i> historic property would be required. The noise level would increase 2.8 decibels. No physical impact to the <i>Blue Ball Barn</i>. The noise level would not increase. No physical impact to the <i>Bird-Husbands House</i>. The noise level would increase 3.6 decibels. Renovation and adaptive reuse proposed for the <i>Murphy House</i> and <i>Blue Ball Barn</i>. <p>Porter Reservoir</p> <ul style="list-style-type: none"> A 0.7-acre acquisition of property would be required. The noise level would increase 3.5 decibels. The existing entrance would be relocated to an access road north of the reservoir. The entrance pillars would remain at the existing entrance, though moved to a safe distance from U.S. 202. <p>One Rock Manor Avenue</p> <ul style="list-style-type: none"> A 0.18-acre acquisition of property would be required. The noise level would increase 2.3 decibels. 	<p>J.R. Weldin Archaeological Site</p> <ul style="list-style-type: none"> None of the 18th or the 19th century ruins would be impacted. Approximately 10% of the site, which contains significant information, would still be physically impacted (data recovery proposed). The noise level would increase by 4.1 decibels. <p>Ronald McDonald House Archaeological Site</p> <ul style="list-style-type: none"> Most of the site would be physically destroyed (data recovery proposed). 	<ul style="list-style-type: none"> Dismissed due to impacts on proposed golf course expansion and reduction of land required for stormwater management facilities.

Table IV-1: Summary of Impacts (Preliminary Alternatives Analysis)

Alternative:	Satisfies Project Purpose and Need	Community Cohesion	Aquatic Resource Impacts	Terrestrial Impacts	Noise Impacts	Historic Resource Impacts	Arch. Resource Impacts	Conclusion/Status
Ronald McDonald House Arch. Site Avoidance Alternative (Figure 19)	Yes	<ul style="list-style-type: none"> Appears inconsistent with Master Plan- results in adverse impact to and acquisition of property from AstraZeneca (north shift). Impacts the Ronald McDonald House (south shift). 	<ul style="list-style-type: none"> Increased wetland impact of 0.66 acres (north shift). 	<ul style="list-style-type: none"> 7 acres of forestland from the Alapocas Tract, AstraZeneca Triangle and the Weldin Tract would be lost. 24 acres of fallow agricultural field from the Alapocas Tract, AstraZeneca Triangle and the Weldin Tract would be lost. 	<p>4 areas that warrant abatement consideration:</p> <ul style="list-style-type: none"> Deerhurst Community (abatement not feasible) Ronald McDonald House (design being evaluated) One Rock Manor Avenue (design being evaluated) Blue Ball Barn (abatement not feasible) 	<p>Nemours Historic District</p> <ul style="list-style-type: none"> A 12.8-acre acquisition of property would be required. Visual, audible and atmospheric impacts. No contributing structures or buildings to the historic district would be physically altered. A .06-acre encroachment on the <i>Murphy House</i> historic property would be required. The noise level would increase 2.8 decibels. No physical impact to the <i>Blue Ball Barn</i>. The noise level would not increase. No physical impact to the <i>Bird-Husbands House</i>. The noise level would increase 3.6 decibels. Renovation and adaptive reuse proposed for the <i>Murphy House</i> and <i>Blue Ball Barn</i>. <p>Porter Reservoir</p> <ul style="list-style-type: none"> A 0.7-acre acquisition of property would be required. The noise level would increase 3.5 decibels. The existing entrance would be relocated to an access road north of the reservoir. The entrance pillars would remain at the existing entrance, though moved to a safe distance from U.S. 202. <p>One Rock Manor Avenue</p> <ul style="list-style-type: none"> A 0.18-acre acquisition of property would be required. The noise level would increase 2.3 decibels. 	<p>J.R. Weldin Archaeological Site</p> <ul style="list-style-type: none"> All of the 18th century ruins and a portion of the 19th century ruins would still be impacted (data recovery proposed). Approximately 47% of the site, which contains significant information, would be physically impacted. <p>Ronald McDonald House Archaeological Site</p> <ul style="list-style-type: none"> No physical alteration of the site would occur. 	<ul style="list-style-type: none"> Dismissed due to increased impacts to wetlands and impact and acquisition of AstraZeneca Property.

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Nemours Historic District Minimization Alternative (Figure 20)	Yes	<ul style="list-style-type: none"> Consistent with the Master Plan Alternative. Would result in no residential displacements and one (1) business displacement. Removal of Weldin Husbands House would result. 	<ul style="list-style-type: none"> Approximately 1.12 acres of wetlands will be impacted through new roadway crossings. A total of 595 linear feet of waterway will be affected through new roadway crossings and structures. Environmental enhancement planned via storm water management, stream restoration and wetland mitigation. 	<ul style="list-style-type: none"> 7 acres of forestland from the Alapocas Tract, AstraZeneca Triangle and the Weldin Tract would be lost. 24 acres of fallow agricultural field from the Alapocas Tract, AstraZeneca Triangle and the Weldin Tract would be lost. 	<p>4 areas that warrant abatement consideration:</p> <ul style="list-style-type: none"> Deerhurst Community (abatement not feasible) Ronald McDonald House (design being evaluated) One Rock Manor Avenue (design being evaluated) Blue Ball Barn (abatement not feasible) 	<p>Nemours Historic District</p> <ul style="list-style-type: none"> An 11.8-acre acquisition of property would be required. (Slight reduction of impacts) Visual, audible and atmospheric impacts. No contributing structures or buildings to the historic district would be physically altered. A .06-acre encroachment on the <i>Murphy House</i> historic property would be required. The noise level would increase 2.8 decibels. No physical impact to the <i>Blue Ball Barn</i>. The noise level would not increase. No physical impact to the <i>Bird-Husbands House</i>. The noise level would increase 3.6 decibels. Renovation and adaptive reuse proposed for the <i>Murphy House</i> and <i>Blue Ball Barn</i>. <p>Porter Reservoir</p> <ul style="list-style-type: none"> A 0.7-acre acquisition of property would be required. The noise level would increase 3.5 decibels. The existing entrance would be relocated to an access road north of the reservoir. The entrance pillars would remain at the existing entrance, though moved to a safe distance from U.S. 202. <p>One Rock Manor Avenue</p> <ul style="list-style-type: none"> A 0.18-acre acquisition of property would be required. The noise level would increase 2.3 decibels. 	<p>J.R. Weldin Archaeological Site</p> <ul style="list-style-type: none"> All of the 18th century ruins and a portion of the 19th century ruins would be impacted (data recovery proposed). Approximately 47% of the site, which contains significant information, would still be physically impacted (data recovery proposed). <p>Ronald McDonald House Archaeological Site</p> <ul style="list-style-type: none"> Most of the site would be destroyed (data recovery proposed). 	<ul style="list-style-type: none"> Dismissed as a separate alternative (minimization features carried forward)

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Alternative:	Satisfies Project Purpose and Need	Community Cohesion	Aquatic Resource Impacts	Terrestrial Impacts	Noise Impacts	Historic Resource Impacts	Arch. Resource Impacts	Conclusion/Status
Murphy House Minimization Alternative (Figure 21)	Yes	<ul style="list-style-type: none"> • Would result in no residential displacements and one business displacement. • Consistent with future economic development plans. • Goals for completion of bicycle and Greenway Trail met. • Consistent with Master Plan and recreational facility development planned for Weldin Tract. 	<ul style="list-style-type: none"> • Approximately 1.12 acres of wetlands will be impacted through new roadway crossings. • A total of 595 linear feet of waterway will be affected through new roadway crossings and structures. • Environmental enhancement planned via storm water management, stream restoration and wetland mitigation. 	<ul style="list-style-type: none"> • 7 acres of forestland from the Alapocas Tract, AstraZeneca Triangle and the Weldin Tract would be lost. • 24 acres of fallow agricultural field from the Alapocas Tract, AstraZeneca Triangle and the Weldin Tract would be lost. 	<p>4 areas that warrant abatement consideration:</p> <ul style="list-style-type: none"> • Deerhurst Community (abatement not feasible) • Ronald McDonald House (design being evaluated) • One Rock Manor Avenue (design being evaluated) ▪ Blue Ball Barn (abatement not feasible) 	<p>Nemours Historic District</p> <ul style="list-style-type: none"> • A 12.8-acre acquisition of property would be required. • Visual, audible and atmospheric impacts. • No contributing structures or buildings to the historic district would be physically altered. • A .04-acre encroachment on the <i>Murphy House</i> historic property would be required. The noise level would increase 2.8 decibels. • No physical impact to the <i>Blue Ball Barn</i>. The noise level would not increase. • No physical impact to the <i>Bird-Husbands House</i>. The noise level would increase 3.6 decibels. • Renovation and adaptive reuse proposed for the <i>Murphy House</i> and <i>Blue Ball Barn</i>. <p>Porter Reservoir</p> <ul style="list-style-type: none"> • A 0.7-acre acquisition of property would be required. The noise level would increase 3.5 decibels. • The existing entrance would be relocated to an access road north of the reservoir. The entrance pillars would remain at the existing entrance, though moved to a safe distance from U.S. 202. <p>One Rock Manor Avenue</p> <ul style="list-style-type: none"> • A 0.18-acre acquisition of property would be required. The noise level would increase 2.3 decibels. 	<p>J.R. Weldin Archaeological Site</p> <ul style="list-style-type: none"> • All of the 18th century ruins and a portion of the 19th century ruins would be impacted (data recovery proposed). • Approximately 47% of the site, which contains significant information, would still be physically impacted. <p>Ronald McDonald House Archaeological Site</p> <ul style="list-style-type: none"> • Most of the site would be destroyed (data recovery proposed). 	<ul style="list-style-type: none"> • Dismissed as a separate alternative (minimization features carried forward).

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Alternative:	Satisfies Project Purpose and Need	Community Cohesion	Aquatic Resource Impacts	Terrestrial Impacts	Noise Impacts	Historic Resource Impacts	Arch. Resource Impacts	Conclusion/Status
J.R. Weldin Archaeological Site Minimization Alternative (Figure 24)	Yes	<ul style="list-style-type: none"> Inconsistent-affects proposed park features and development. 	<ul style="list-style-type: none"> Approximately 1.12 acres of wetlands will be impacted through new roadway crossings. A total of 595 linear feet of waterway will be affected through new roadway crossings and structures. Environmental enhancement planned via storm water management, stream restoration and wetland mitigation. 	<ul style="list-style-type: none"> 7 acres of forestland from the Alapocas Tract, AstraZeneca Triangle and the Weldin Tract would be lost. 24 acres of fallow agricultural field from the Alapocas Tract, AstraZeneca Triangle and the Weldin Tract would be lost. 	<p>4 areas that warrant abatement consideration:</p> <ul style="list-style-type: none"> Deerhurst Community (abatement not feasible) Ronald McDonald House (design being evaluated) One Rock Manor Avenue (design being evaluated) Blue Ball Barn (abatement not feasible) 	<p>Nemours Historic District</p> <ul style="list-style-type: none"> A 12.8-acre acquisition of property would be required. Visual, audible and atmospheric impacts. No contributing structures or buildings to the historic district would be physically altered. A .06-acre encroachment on the <i>Murphy House</i> historic property would be required. The noise level would increase 2.8 decibels. No physical impact to the <i>Blue Ball Barn</i>. The noise level would not increase. No physical impact to the <i>Bird-Husbands House</i>. The noise level would increase 3.6 decibels. Renovation and adaptive reuse proposed for the <i>Murphy House</i> and <i>Blue Ball Barn</i>. <p>Porter Reservoir</p> <ul style="list-style-type: none"> A 0.7-acre acquisition of property would be required. The noise level would increase 3.5 decibels. The existing entrance would be relocated to an access road north of the reservoir. The entrance pillars would remain at the existing entrance, though moved to a safe distance from U.S. 202. <p>One Rock Manor Avenue</p> <ul style="list-style-type: none"> A 0.18-acre acquisition of property would be required. The noise level would increase 2.3 decibels. 	<p>J.R. Weldin Archaeological Site</p> <ul style="list-style-type: none"> None of the 18th century ruins and a portion of the 19th century ruins would be impacted (data recovery proposed). Approximately 43% of the site, which contains significant information, would be physically impacted The noise level would increase by 4.1 decibels. <p>Ronald McDonald House Archaeological Site</p> <ul style="list-style-type: none"> Most of the site would be physically destroyed (data recovery proposed). 	<ul style="list-style-type: none"> Dismissed due to overall impacts to J.R. Weldin Archaeological Site, including isolation of the 18th century ruins between highway features.

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Alternative:	Satisfies Project Purpose and Need	Community Cohesion	Aquatic Resource Impacts	Terrestrial Impacts	Noise Impacts	Historic Resource Impacts	Arch. Resource Impacts	Conclusion/Status
Master Plan Modified Alternative Associated with Option A and Option B (Figures 25/26)	Yes	<p>Option A:</p> <ul style="list-style-type: none"> Generally consistent with Master Plan Alternative. <p>Option B:</p> <ul style="list-style-type: none"> Potentially inconsistent with the Master Plan because it separates park facilities by a local (park) roadway), violating safety buffer requirement of 30 feet. Eastpark Drive would be placed south of and immediately adjacent to three (3) multi purpose fields, separating the facilities. Create additional stormwater management problems in the Shellpot Creek drainage basin and adjacent neighborhoods. Further site layout studies are necessary for the parks plan before Option B can be potentially dismissed. 	<p>Option A:</p> <ul style="list-style-type: none"> Generally consistent with Master Plan Alternative. <p>Option B:</p> <ul style="list-style-type: none"> No additional wetland impacts. No additional water way impacts. Environmental enhancement planned via storm water management, stream restoration and wetland mitigation. 	<p>Option A:</p> <ul style="list-style-type: none"> Generally consistent with Master Plan Alternative. <p>Option B:</p> <ul style="list-style-type: none"> No additional forestland will be lost No additional fallow agricultural land will be impacted. 	<p>Option A:</p> <p>Generally consistent with Master Plan Alternative.</p> <p>Option B:</p> <p>No additional abatement for noise will be required.</p>	<p>Option A:</p> <p>Generally consistent with Master Plan Alternative.</p> <p>Option B:</p> <p>Nemours Historic District</p> <ul style="list-style-type: none"> An 11.8-acre acquisition of property would be required. Visual, audible and atmospheric impacts. No contributing structures or buildings to the historic district would be physically altered. A .04-acre encroachment on the <i>Murphy House</i> historic property would be required. The noise level would increase 2.8 decibels. No physical impact to the <i>Blue Ball Barn</i>. The noise level would not increase. No physical impact to the <i>Bird-Husbands House</i>. The noise level would increase 3.6 decibels. Renovation and adaptive reuse proposed for the <i>Murphy House</i> and <i>Blue Ball Barn</i>. <p>Porter Reservoir</p> <ul style="list-style-type: none"> A 0.7-acre acquisition of property would be required. The noise level would increase 3.5 decibels. The existing entrance would be relocated to an access road north of the reservoir. The entrance pillars would remain at the existing entrance, though moved to a safe distance from U.S. 202. <p>One Rock Manor Avenue</p> <ul style="list-style-type: none"> A 0.18-acre acquisition of property would be required. The noise level would increase 2.3 decibels. 	<p>J.R. Weldin Archaeological Site</p> <ul style="list-style-type: none"> The noise level would increase by 4.1 decibels. <p>Option A:</p> <ul style="list-style-type: none"> Generally consistent with Master Plan Alternative. All of the 18th century ruins and a portion of the 19th century ruins would be impacted (data recovery proposed). <u>Option A:</u> Phase III mitigation to the destroyed area. Approximately 47% of the site, which contains significant information, would be physically impacted. <p>Option B:</p> <ul style="list-style-type: none"> <u>Option B:</u> Approximately 10% of the site, which contains significant information, would be physically impacted. <p>Ronald McDonald House Archaeological Site</p> <ul style="list-style-type: none"> Most of the site would be physically destroyed (data recovery proposed). 	<ul style="list-style-type: none"> Carried forward for further study with two (2) options for the Eastpark Drive. <p>Option A:</p> <ul style="list-style-type: none"> The alignment is consistent with the Master Plan. <p>Option B:</p> <ul style="list-style-type: none"> The alignment is consistent with the J.R Weldin archaeological site Avoidance. Further site layout studies are necessary for parks plan before Option B can be retained or dismissed.