NOXIOUS WEED MANAGEMENT PLAN

FLYING HORSE NORTH RESIDENTIAL DEVELOPMENT
El Paso County, CO
Project No. 16-007

PREPARED FOR:

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EXECUTIVE SUMMARY

CORE Consultants, Inc. (CORE) was retained by Classic Communities (Client) to prepare a Noxious Weed Management Plan ("Plan") for the proposed Flying Horse North Residential Development, in El Paso County, Colorado. The Project would be developed on approximately 1,400 acres of undeveloped land located southwest of the intersection of Black Forest Road and Hodgen Road, and stretching west to Colorado State Highway (SH) 83.

This Plan is a Project-specific document that has been designed to set forth Project-level regulations to prevent and control the spread of noxious weeds within the Project and vicinity. Noxious weeds are defined as those non-native plants that aggressively invade and are detrimental to native vegetation communities and ecosystems. The *Colorado State Noxious Weed Act* (Colorado Revised Statute 35-5.5-103) developed a list of plants considered noxious in the state of Colorado that should be targeted for control by various methods dependent on list category (A, B, or C). The Plan shall tier to the requirements set forth by the El Paso County (EPC) Noxious Weed Management Plan (2003, updated 2014), which contains guidelines for control and treatment of noxious weeds found in the County. EPC requires that commercial or industrial projects that include ground disturbing activities submit a project-specific noxious weed management plan. This Plan provides methods to prevent and control the spread of noxious weeds at pre-construction, construction, and post-construction phases of the Project.

1.0 INTRODUCTION AND PROJECT LOCATION

Classic Communities (Client) retained CORE Consultants, Inc. (CORE) to prepare a Noxious Weed Management Plan ("Plan") for the proposed Flying Horse North Residneitial Development Project (Project) located in El Paso County (EPC), Colorado. The Project will consist of 283 single family residential lots, a 19-hole golf course, a permanent access road, arterial roads, utilities, and other associated facilities. The Project is located on approximately 1,400 acres southwest of the intersection of Black Forest Road and Hodgen Road, and stretching west to Colorado State Highway (SH) 83. (**Appendix I**: *Site Location Map).*

Topography of the Project consists of rolling foothills grasslands on the eastern portion of the site transitioning into pine-oak woodlands on the western portion of the site. (Chapman *et al.* 2006). The Foothills Grasslands Ecoregion is composed of a mixture of tall and mid-grasses and isolated pine woodlands. Dominant species include little bluestem (*Schizachyrium scoparium*), big bluestem (*Andropogon gerardii)*, switch grass (*Panicum virgatum),* and yellow Indiangrass *(Sorghastrum nutans*; Chapman *et al.* 2006). A portion of the Project is situated on the eastern edge of the Black Forest which coincides with the eastern edge of the Pine-Oak Woodlands Ecoregion (Chapman *et al.* 2006). Ponderosa pine (*Pinus ponderosa*) and Gambel oak (*Quercus gambelii*) dominate the canopy and understory. Mountain mahogany (*Cercocarpus montanus*), skunkbush (*Rhus trilobata*), western serviceberry (*Amelanchier alnifolia*), and chokecherry (*Prunus virginiana*) are also found scattered throughout the understory. Elevations of the Project range between approximately 7,400 and 7,600 feet above mean sea level (AMSL), with rolling hills and a distinct, shallow ridge at the boundary of the western (Arkansas River) and eastern (South Platte River) watershed.

2.0 NOXIOUS WEED MANAGEMENT BACKGROUND

The spread of invasive species roughly mirrors the rise in human travel and commerce (Mack *et al.* 2000 and Sheley *et al.* 1996). Many noxious weeds have been identified as aggressive, weather resistant, escaped ornamentals from residential landscapes (Westbrooks 1998). *The Federal Noxious Weed Act* (7 U.S.C. 2801 et seq.; 88 Stat. 2148) was enacted in 1975 in an effort to halt the spread of noxious weeds across the country. Following guidelines set forth by the *Federal Noxious Weed Act*, Colorado passed the *Colorado Noxious Weed Act* ("Act"; C.R.S. 35-5.5-103) in 1990. The Act identified noxious weeds particular to the landscape of Colorado. As defined in the Act, noxious weeds are any non-native plant that:

- aggressively invades or is detrimental to economic crops or native plant communities;
- is poisonous to livestock;
- is a carrier of detrimental insects, diseases, or parasites;
- or is detrimental, either by direct or indirect effects, to the environmentally sound management of natural or agricultural ecosystems.

The Act was amended in 2002 to require counties to establish individual management plans relevant to local municipalities. EPC developed the *El Paso County Noxious Weed Management Plan* in 2003 (updated in 2014) to identify county-level noxious weed management practices that would preserve the economic and environmental value of EPC lands (EPC 2014).

Disturbed areas are vulnerable to infestation from noxious weeds due to the aggressive nature by which noxious weeds can spread. Construction activities including clearing, grading, and excavation promote the establishment of noxious weed species before native vegetation can reestablish within the cleared area. As such, the *EPC Noxious Weed Management Plan* requires integrated management plans for any activities requiring dirt moving activities within El Paso County (EPC 2014). Project-specific integrated management plans should include methods to prevent, control, and monitor the spread of noxious weeds and should take into account the multiple methods by which noxious weeds germinate. Annuals typically reproduce through seed which can easily attach to equipment during construction activities. Perennials often propagate through an extensive root system. Ground disturbing activities have the potential to redistribute root sections that could quickly propagate in other areas. Because of the multiple methods by which noxious weeds spread and propagate, integrated management plans should outline education and native revegetation methods, in addition to chemical control methods (EPC 2014).

3.0 NOXIOUS WEED MANAGEMENT PLAN

3.1 Purpose and Goals

Construction of the Project will occur over several months. Upon completion of construction, the Project will consist of approximately 283 single family homes, a golf course, parks and trails, and permanent access roads. It is anticipated that noxious weeds will concentrate along road medians and highly trafficked areas within the development. As such, this integrated management plan includes pre-construction, construction, and maintenance methods to prevent, control, and monitor the spread of identified noxious weed populations within the Project. It will be the responsibility of the Homeowner's Association (HOA) to establish covenants to prevent and control the spread of noxious weeds. Typically, an HOA will contract a licensed herbicide applicator to seasonally survey and spray for noxious weeds throughout the development. Additionally, community landscaped areas shall be regularly mowed and treated for noxious weeds. Integrated management methods shall include the following:

- Surveys to inventory and map established noxious weed populations;
- sharing of data with EPC to aid in EPC level inventory;
- chemical treatment of all identified noxious weed populations;
- and periodic post-construction treatment as needed and as determined by the HOA.

Management methods identified within this Plan will comply with *Chapter 6: General Development Standards of the EPC Land Development Code* (EPC 2015), the *EPC Noxious Weed Management Plan* (EPC 2014) and the Act (Colorado Revised Statutes 35-5.5-103). Biological control methods are not included due to the prohibition of their use on plants targeted for eradication (Colorado Weed Management Association [CWMA] 2015). Noxious weed species targeted would be those identified in the Act, with special consideration for those species listed in the *EPC Noxious Weeds and Control Methods* (EPC 2008).

3.2 Regulated Species

The Act identifies three levels of priority for control of noxious weeds throughout the State of Colorado (State). The CWMA maintains an updated list of noxious weeds known to occur in the State. CWMA also maintains a "watch list" of noxious weeds that occur in proximity to State borders and/or those species with a distribution that is not yet understood (**Appendix II**: *Colorado State*

Noxious Weed List). List A noxious weeds are those species targeted for eradication. List A noxious weed populations are typically isolated in nature or rare throughout much of the State (*Colorado Revised Statutes 35-5.5-103*). Eradication and reporting of List A populations is required by law (Colorado Department of Agriculture [CDA] 2006). List B species are discretely distributed throughout the State and must be eradicated, contained, or suppressed (*Colorado Revised Statutes 35-5.5-103*). EPC requires control of all List B noxious weed populations located within the Project area (EPC 2014). List C noxious weed populations are widespread and well established. EPC requires control of List C species through education of the public and/or chemical control (EPC 2014).

3.3 Pre-Construction

Pre-construction noxious weed management protocols include prevention and treatment. Prevention and treatment shall be accomplished at the Project through surveys of construction easements, followed by primary chemical treatment.

Noxious weed surveys shall be conducted within all construction easements prior to construction (i.e. prior to any ground disturbing activities). Surveyors shall use GPS units to collect data on noxious weed populations. Data collected for List C populations shall include species and general coordinates of population; data collected for List A and List B populations shall include species, coordinates for the approximate center of each identified population, and the approximate radius of the infestation. EPC shall receive a map of identified noxious weed populations within the Project. Should surveyors locate List A species, specific data collected shall be sent to EPC. Treatment type shall be selected depending on the priority rank of the noxious weed species (List A, B, or C), and the location and density of the infestation. Chemical treatment shall include herbicide application; the suggested chemical treatment protocol is described below.

List A species must be eradicated by law (USDA 2006). Should surveyors identify List A species, a plant sample shall be collected for positive identification through EPC's Environmental Division. Upon positive confirmation of a List A species, hand pulling of the population shall be performed to remove the mechanism for creation of a seed-bank. Chemical treatment shall be applied to the area and shall be selected in compliance with the *EPC Noxious Weeds and Control Methods* (EPC 2008). List B species shall be chemically treated with an herbicide selected in compliance with the *EPC Noxious Weeds and Control Methods* (EPC 2008). Herbicide selection may vary depending upon the time of year and the life cycle of the plant. All herbicide application shall occur a minimum of two weeks prior to scheduled ground disturbing activities. The herbicide applicator shall treat noxious weed populations with EPC recommended chemicals (EPC 2014). CORE recommends not treating List C noxious weeds; List C noxious weeds are well established and difficult to treat since many have hardy seed beds that are not affected by herbicide application. Rather than completely eradicate List C popualtions, herbicide applicators manage populations with continued seasonal treatments. A more efficient protocol would be to avoid List C weeds to the greatest extent possible during construction. It is anticipated that the HOA will treat all noxious or weedy species within the development post-construction, including List C species, and will maintain a weed-free landscape within the Project.

3.4 Construction

Construction phase noxious weed management protocols shall include prevention and maintenance. Contractors shall prevent the spread of noxious weeds through the use of clean equipment and through treatment of all List A and List B populations prior to ground disturbing activities. Heavy equipment used on the site shall be washed and sprayed before mobilization on the Project. Doing

so would ensure that soils and seeds are not transported from other sites. Noxious weed treatment shall occur to areas slated for ground disturbance prior to construction. Doing so will ensure that active List A and List B noxious weed populations will become inactive prior to construction.

It is anticipated that a large portion of the Project will be landscaped including the golf course and open spaces. Top-soil sources for landscaped areas shall be provided from native site top-soil. Any salvaged top-soil piles shall be treated for noxious weeds and maintained and protected from erosion and/or noxious weed establishment during construction through Best Management Practices (BMPs) identified in the Project Grading, Erosion, and Sediment Control (GESC) Plan.

3.5 Post-Construction

Post-construction noxious weed management protocols shall be limited to maintenance treatment, as needed and as determined by the HOA. It is anticipated that the landscaped areas of the Project will require seasonal noxious weed treatment and maintenance for the life of the Project. CORE notes that any existing List A and List B noxious weed populations should be treated prior to construction. Pre-construction treatment of the site may halt the spread of List A and List B noxious weeds in the immediate vicinity of the Project. However, noxious weed populations may persist on the Project's periphery. It shall be the HOA's responsibility to identify and treat any persistent noxious weed populations on the Project.

4.0 CONCLUSIONS AND RECOMMENDATIONS

The Flying Horse North Noxious Weed Management Plan was written to comply with guidelines in the Colorado Noxious Weed Act (Colorado Revised Statutes 35-5.5-103) and the EPC Noxious Weed Management Plan. CORE recommends that the Client survey for all noxious weed populations and treat any List A and List B noxious weed populations located on the Project. The development's HOA shall be responsible for maintaining a weed-free property following construction. Typically, chemical treatment is applied between late spring and early fall depending on the recommended treatment protocols for each noxious weed species (EPC 2014).

Should you have any questions regarding this or any other matter, please feel free to contact our office at (303) 703-4444.

Sincerely,
CORE Consultants, Inc.

Tina Brazil
Environmental Consultant

Dan Maynard
Senior Ecologist

REFERENCES

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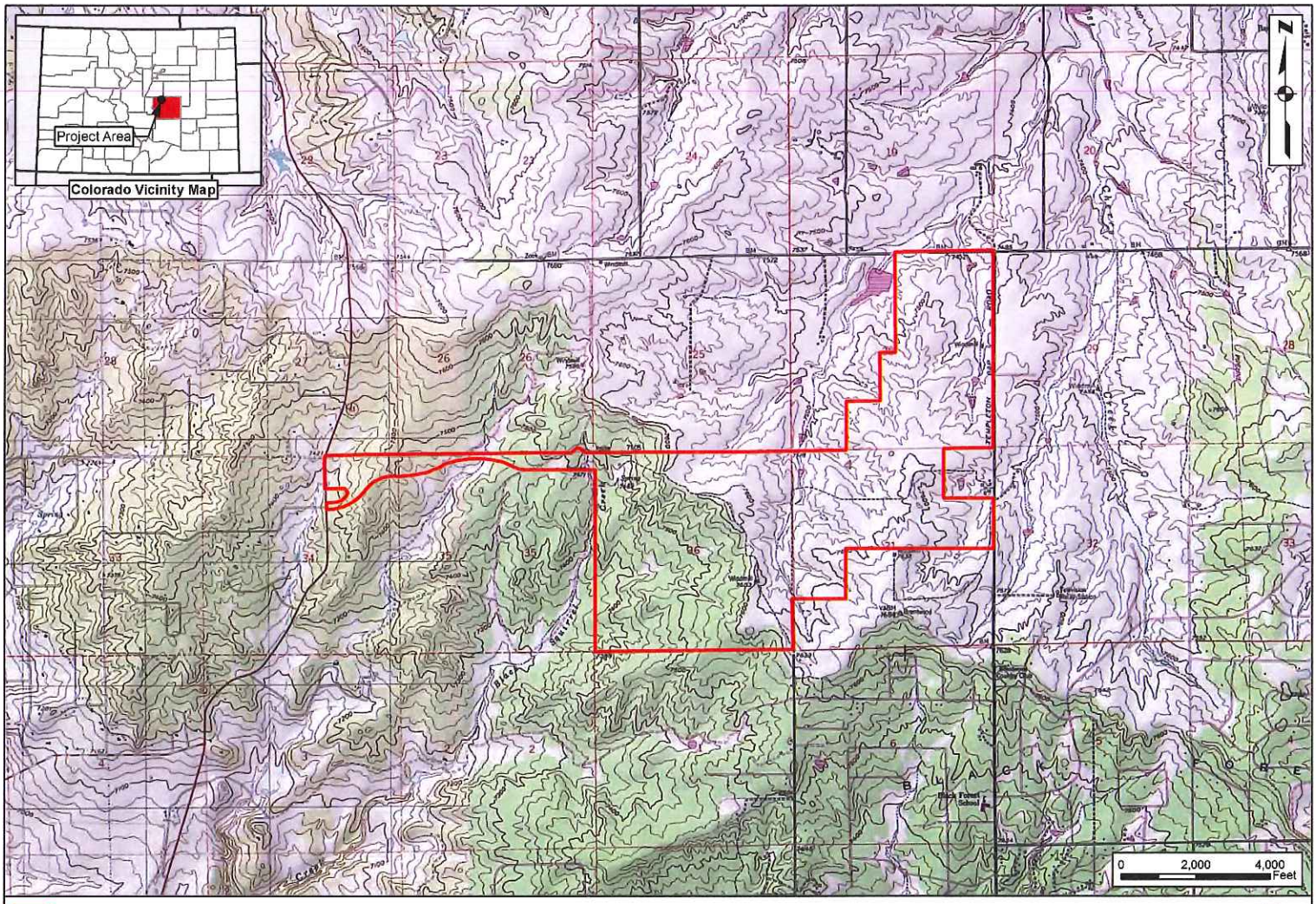
APPENDIX I

SITE LOCATION MAP



Project Boundary (±1,445 ac)

Flying Horse North

Site Location Map

El Paso County, Colorado

Reference
USGS 7.5 Minute Topographic Quadrangle
Monument, CO Quad
Black Forest, CO Quad

CORE CONSULTANTS

Date: 7/7/2016
CORE Project # 16-007

APPENDIX II

COLORADO STATE NOXIOUS WEED LIST

Colorado Noxious Weeds (including Watch List), effective March 31, 2017

List A Species (25)

Common	*Scientific*
African rue	*(Peganum harmala)*
Bohemian knotweed	*(Polygonum x bohemicum)*
Camelthorn	*(Alhagi maurorum)*
Common crupina	*(Crupina vulgaris)*
Cypress spurge	*(Euphorbia cyparissias)*
Dyer's woad	*(Isatis tinctoria)*
Elongated mustard	*(Brassica elongata)*
Flowering rush	*(Butomus umbellatus)*
Giant knotweed	*(Polygonum sachalinense)*
Giant reed	*(Arundo donax)*
Giant salvinia	*(Salvinia molesta)*
Hairy willow-herb	*(Epilobium hirsutum)*
Hydrilla	*(Hydrilla verticillata)*
Japanese knotweed	*(Polygonum cuspidatum)*
Meadow knapweed	*(Centaurea nigrescens)*
Mediterranean sage	*(Salvia aethiopis)*
Medusahead	*(Taeniatherum caput-medusae)*
Myrtle spurge	*(Euphorbia myrsinites)*
Orange hawkweed	*(Hieracium aurantiacum)*
Parrotfeather	*(Myriophyllum aquaticum)*
Purple loosestrife	*(Lythrum salicaria)*
Rush skeletonweed	*(Chondrilla juncea)*
Squarrose knapweed	*(Centaurea virgata)*
Tansy ragwort	*(Senecio jacobaea)*
Yellow starthistle	*(Centaurea solstitialis)*

List B Species (40)

Common	*Scientific*
Absinth wormwood	*(Artemisia absinthium)*
Black henbane	*(Hyoscyamus niger)*
Bull thistle	*(Cirsium vulgare)*
Bouncingbet	*(Saponaria officinalis)*
Canada thistle	*(Cirsium arvense)*
Chinese clematis	*(Clematis orientalis)*
Common tansy	*(Tanacetum vulgare)*
Common teasel	*(Dipsacus fullonum)*
Corn chamomile	*(Anthemis arvensis)*
Cutleaf teasel	*(Dipsacus laciniatus)*
Dalmatian toadflax, broad-leaved	*(Linaria dalmatica)*
Dalmatian toadflax, narrow-leaved	*(Linaria genistifolia)*
Dame's rocket	*(Hesperis matronalis)*
Diffuse knapweed	*(Centaurea diffusa)*

List B Species (40) continued

Common	*Scientific*
Eurasian watermilfoil	*(Myriophyllum spicatum)*
Hoary cress	*(Cardaria draba)*
Houndstongue	*(Cynoglossum officinale)*
Jointed goatgrass	*(Aegilops cylindrica)*
Leafy spurge	*(Euphorbia esula)*
Mayweed chamomile	*(Anthemis cotula)*
Moth mullein	*(Verbascum blattaria)*
Musk thistle	*(Carduus nutans)*
Oxeye daisy	*(Leucanthemum vulgare)*
Perennial pepperweed	*(Lepidium latifolium)*
Plumeless thistle	*(Carduus acanthoides)*
Russian knapweed	*(Acroptilon repens)*
Russian-olive	*(Elaeagnus angustifolia)*
Salt cedar	*(Tamarix chinensis, T. parviflora, and T. ramosissima)*
Scentless chamomile	*(Tripleurospermum perforata)*
Scotch thistle	*(Onopordum acanthium, O. tauricum)*
Spotted knapweed	*(Centaurea stoebe)*
Spotted x diffuse knapweed hybrid	*(Centaurea x psammogena = C. stoebe x C. diffusa)*
Sulfur cinquefoil	*(Potentilla recta)*
Wild caraway	*(Carum carvi)*
Yellow nutsedge	*(Cyperus esculentus)*
Yellow toadflax	*(Linaria vulgaris)*
Yellow x Dalmatian toadflax hybrid	*(Linaria vulgaris x L. dalmatica)*

List C Species (16)

Common	*Scientific*
Bulbous bluegrass	*(Poa bulbosa)*
Chicory	*(Cichorium intybus)*
Common burdock	*(Arctium minus)*
Common mullein	*(Verbascum thapsus)*
Common St. Johnswort	*(Hypericum perforatum)*
Downy brome	*(Bromus tectorum)*
Field bindweed	*(Convolvulus arvensis)*
Halogeton	*(Halogeton glomeratus)*
Johnsongrass	*(Sorghum halepense)*
Perennial sowthistle	*(Sonchus arvensis)*
Poison hemlock	*(Conium maculatum)*
Puncturevine	*(Tribulus terrestris)*
Quackgrass	*(Elymus repens)*
Redstem filaree	*(Erodium cicutarium)*
Velvetleaf	*(Abutilon theophrasti)*
Wild proso millet	*(Panicum miliaceum)*

Watch List Species (24)

Common	*Scientific*
Asian mustard	*(Brassica tournefortii)*
Baby's breath	*(Gypsophila paniculata)*
Bathurst burr, Spiney cocklebur	*(Xanthium spinosum)*
Brazilian egeria, Brazilian elodea	*(Egeria densa)*
Common bugloss	*(Anchusa officinalis)*
Common reed	*(Phragmites australis)*
Garden loosestrife	*(Lysimachia vulgaris)*
Garlic mustard	*(Alliaria petiolata)*
Himalayan blackberry	*(Rubus armeniacus)*
Hoary alyssum	*(Berteroa incana L.)*
Japanese blood grass/cogongrass	*(Imperata cylindrica)*
Meadow hawkweed	*(Hieracium caespitosum)*
Onionweed	*(Asphodelus fistulosus)*
Purple pampas grass	*(Cortaderia jubata)*
Scotch broom	*(Cytisus scoparius)*
Sericea lespedeza	*(Lespedeza cuneata)*
Swainsonpea	*(Sphaerophysa salsula)*
Syrian beancaper	*(Zygophyllum fabago)*
Water hyacinth	*(Eichhornia crassipes)*
Water lettuce	*(Pistia stratiotes)*
White bryony	*(Bryonia alba)*
Woolly distaff thistle	*(Carthamus lanatus)*
Yellow flag iris	*(Iris pseudacorus)*
Yellow floatingheart	*(Nymphoides peltata)*