BOARD OF SUPERVISORS AGENDA ITEM REPORT

Requested Board Meeting Date: January 16, 2018

Title: P17CU00011 - Fairfax Companies, LLC - S. Wilmot Road - Type III Conditional Use Permit

Introduction/Background:

The proposal is for a multi-use facility containing a landfill for construction and demolition materials, a composting operation for green waste, and a recycling facility. The vacant 80-acre parcel is located 1/4 of a mile east of S. Wilmot Road, approximately one mile south of the federal prison complex and five miles north of Sahuarita Road. The property is accessed by an existing public right-of-way that extends eastward from Wilmot Road.

Discussion:

The project also features ongoing sand and gravel extraction operations. This is exempt from local zoning authority by State Statutes and are not a part of the request. The site formerly served as a sand and gravel operation. All adjoining properties are vacant and are primarily undisturbed. The proposed landfill for construction and demolition materials is a reasonable use of the large pits that will be created by the sand and gravel mining. The composting of green waste represents a highly desirable use and an intelligent way to "finish" the landfill areas. The proposed recycling facility is supported with special conditions.

Conclusion:

The Pima County Zoning Code requires a Type III Conditional Use Permit for a landfill for construction and demolition materials; composting operations; and a recycling facility in the RH zone.

Recommendation:

The Pima County Hearing Administrator recommends approval of the conditional use permit.
The Planning & Zoning Commission recommends approval of the conditional use permit.

Fiscal Impact:

None

Board of Supervisor District:

☐ 1 ☐ 2 ☐ 3 ☒ 4 ☐ 5 ☐ All

JAN 02 '18 AM 10:26 PC CLK OF BD

Department: Development Services Department – Planning Telephone: 520-724-9000

Contact: Tom Drzazgowski Telephone: 520-724-6675

Department Director Signature/Date: 12/22/17

Deputy County Administrator Signature/Date: 12/27/17

County Administrator Signature/Date: C. Dahlberg 12/27/17

PIMA COUNTY
DEVELOPMENT SERVICES

TO: Honorable Steve Christy, Supervisor, District #4

FROM: Chris Poirier, Planning Official
Public Works-Development Services Department-Planning Division

DATE: December 22, 2017

SUBJECT: **P17CU00011 FAIRFAX COMPANIES LLC – S. WILMOT ROAD**
(Conditional Use – Type III – Construction & Demolition Landfill; Composting & Recycling)

The above referenced Conditional Use Permit is within your district and scheduled for the Board of Supervisors' **TUESDAY, JANUARY 16, 2018** hearing.

REQUEST: Type III Conditional Use – Construction & Demolition Landfill; Composting & Recycling

OWNER: The Fairfax Companies, LLC
1360 N. Kolb Road
Tucson, AZ 85715-4922

AGENT: The Fairfax Companies, LLC
c/o Mr. Jason Tankersley
Consultant for The Fairfax Companies, LLC:
1360 N. Kolb Road
Tucson, AZ 85715-4922

The Planning Center
c/o Mr. Brian Underwood
2 E. Congress – Suite 600
Tucson, AZ 85701

DISTRICT: 4

STAFF CONTACT: Tom Drzazgowski

PUBLIC COMMENT TO DATE: Thirty (30) letters have been submitted to Development Services in favor of the applicant's project and Conditional Use request.

HEARING ADMINISTRATOR RECOMMENDATION: APPROVAL WITH STANDARD AND SPECIAL CONDITIONS. (70-0; Commissioners Cook and Becker were absent.)

PLANNING AND ZONING COMMISSION RECOMMENDATION: APPROVAL WITH STANDARD AND SPECIAL CONDITIONS.

MAEVEEN MARIE BEHAN CONSERVATION LANDS SYSTEM: A portion of the property (4%) is subject to the Maeveen Marie Behan Conservation Lands System, this being the southwestern most corner of the site, which is designated as an Important Riparian Area (IRA). The remainder of the property is OUTSIDE OF the MMB-CLS. The applicant's submitted conceptual site plan appears to avoid the designated IRA on the site. Final determination of any associated CLS-related matters will be dealt with at the time of formal Development Plan review.

TD/AH/ar - Attachments

PIMA COUNTY

DEVELOPMENT SERVICES

BOARD OF SUPERVISORS MEMORANDUM

FOR JANUARY 16, 2018 MEETING OF THE BOARD OF SUPERVISORS

TO: HONORABLE BOARD OF SUPERVISORS

FROM: Chris Poirier, Planning Official
Public Works-Development Services Department-Planning Division

DATE: December 22, 2017

ADVERTISED ITEM FOR PUBLIC HEARING
CONDITIONAL USE PERMIT
CONSTRUCTION & DEMOLITION LANDFILL;
AND COMPOSTING & RECYCLING

P17CU00011 FAIRFAX COMPANIES LLC – S. WILMOT ROAD

Request of the Planning Center, representing Fairfax Companies LLC, on property located at 11505 S. Wilmot Road, in the RH (Rural Homestead) Zone, for a conditional use permit for a sand and gravel operation; construction and demolition landfill; and composting and recycling, in accordance with Section 18.13.030.B.23 and 35 of the Pima County Zoning Code as a Type III conditional use permit. On motion, the Planning and Zoning Commission voted 7-0 to recommend **APPROVAL SUBJECT TO STANDARD AND SPECIAL CONDITIONS** (Commissioners Cook and Becker were absent). The Hearing Administrator recommends **APPROVAL SUBJECT TO STANDARD AND SPECIAL CONDITIONS.**
(District 4)

Planning and Zoning Commission Hearing (November 29, 2017)

The Planning & Zoning Commission hearing on this case took place on November 29, 2017. At same, the Commission heard staff's and the applicant's presentation as to the specifics and operational details of the request. The Commission was appreciative of the thoroughness of the applicant's presentation.

Issues raised by Commission members included: 1) a confirmation that half-domed "coverall" structures will not be acceptable for the processing and storage of recyclable materials that possess the potential for windblown scatter (e.g. paper products); 2) the nature of the landfill materials that will be accepted from construction and demolition; 3) the ultimate depth to which sand and gravel materials will be mined; 4) the manner in which the extraction, landfill, and composting operations will be phased across the property; 5) a confirmation that trucks will comprise the majority of routine traffic to and from the site; and 6) the methods to be employed for on-going treatment of the roadway surfaces to ensure dust-control and proper maintenance.

No (0) members of the public appeared to speak on the matter. Staff indicated that it had received no telephone or email inquiries on the case.

After closing the public hearing, the Commission voted 7-0 (motion by Bain, seconded by Gungel; Commissioners Cook and Becker being absent) to recommend APPROVAL of this CUP request to the Board of Supervisors, subject to the standard and special conditions below as promulgated by the Hearing Administrator, and in recognition that the Department of Environmental Quality (DEQ) may request certain additional special conditions prior to the item going before the Board of Supervisors.

Board of Supervisors Memorandum

FOR BOARD OF SUPERVISORS JANUARY 16, 2018 PUBLIC HEARING

TO: HONORABLE BOARD OF SUPERVISORS

FROM: Jim Portner, Hearing Administrator

DATE: December 1, 2017

DOCUMENT: P17CU00011

CONDITIONAL USE PERMIT REQUEST FOR PUBLIC HEARING:

Request of The Planning Center, representing Fairfax Companies, LLC, on property located at 11505 S. Wilmot Road, in the **RH (Rural Homestead) Zone**, for a conditional use permit for a sand and gravel operation; construction and demolition landfill; and composting and recycling, in accordance with Section 18.13.030.B.23 and 35 of the Pima County Zoning Code as a Type III conditional use permit. (District 4)

CASE BACKGROUND AND PARTICULARS

This is a Conditional Use Permit request (Type III) for: **1) a landfill for construction and demolition materials; 2) composting operations; and 3) a recycling facility.** The facility will aolso feature ongoing sand and gravel extraction operations. However, these are covered under the State of Arizona's mining exemption and are therefore not a part of this conditional use permit request. The applicant has submitted a detailed narrative, along with a conceptual site plan, detailing all of the above activities and the manner in which they will occur on the property over time. The site is currently vacant, but there is some disturbance from prior sand and gravel operations in the past.

The property is located at 11505 S. Wilmot Road (Assessors Parcel No. 305-01-0030). While the subject site is addressed of off Wilmot Road, it actually lies approximately one-quarter (1/4) mile east of same and is accessed by an existing public right-of-way that extends eastward from Wilmot Road. The property lies approximately one (1) mile south of the federal prison complex on Wilmot Road and is approximately five (5) miles north of Sahuarita Road.

SUMMARY OF THE PLANNING & ZONING COMMISSION PUBLIC HEARING

The Planning & Zoning Commission hearing on this case took place on November 29, 2017. At same, the Commission heard staff's and the applicant's presentation as to the specifics and operational details of the request. The Commission was appreciative of the thoroughness of the applicant's presentation.

Issues raised by Commission members included: 1) a confirmation that half-domed "coverall" structures will not be acceptable for the processing and storage of recyclable materials that possess the potential for windblown scatter (e.g. paper products); 2) the nature of the landfill materials that will be accepted from construction and demolition; 3) the ultimate depth to which sand and gravel materials will be mined; 4) the manner in which the extraction, landfill, and composting operations will be phased across the property; 5) a confirmation that trucks will comprise the majority of routine traffic to and from the site; and 6) the methods to be employed for on-going treatment of the roadway surfaces to ensure dust-control and proper maintenance.

No (0) members of the public appeared to speak on the matter. Staff indicated that it had received no telephone or email inquiries on the case.

After closing the public hearing, the Commission voted 7-0 (motion by Bain, seconded by Gungel; Commissioners Cook and Becker being absent) to recommend APPROVAL of this CUP request to the Board of Supervisors, subject to the standard and special conditions below as promulgated by the Hearing Administrator, and in recognition that the Department of Environmental Quality (DEQ) may request certain additional special conditions (see DEQ comments on p. 4 of this report) prior to the item going before the Board of Supervisors.

Standard Conditions

The Zoning Code stipulates no standard conditions for this use, other than the requirement that a Type III conditional use permit must be obtained.

Special Conditions

1. This conditional use permit approval is for a multi-use facility containing a landfill for construction and demolition materials, a composting operation for green waste, and a recycling facility. No other non-residential or commercial/industrial uses other than the above are authorized or implied.
2. The attendant sand-and-gravel extraction operations are exempt from local zoning authority by State Statutes and are not a part of this conditional use permit approval.
3. A formal Development Plan and review process for the entire facility is hereby required in accordance with the requirements of Section 18.71 of the Zoning Code.
4. The applicant's submitted narrative, entitled "*The Fairfax Companies, LLC – Type III Conditional Use Permit (CUP): Project Narrative*", and dated November 11, 2017 is

incorporated herein by reference and is considered a material part of this conditional use permit approval. The *Narrative* shall effectively serve as an operations manual for the facility and Pima County shall have enforcement authority to ensure that it is operated in substantial conformance with the *Narrative*.

5. In the event that the applicant or facility operator seeks in the future to materially diverge from the operational parameters outlined in the *Narrative*, they shall submit a revised *Narrative* to the Development Services Department (DSD), which *Narrative* shall be subject to review and acceptance by DSD.
6. With respect to the recycling facility, the following activities shall occur wholly within an enclosed building: 1) the acceptance and initial dumping of all materials that are prone to windblown scatter (e.g. loose paper and cardboard products); 2) the sorting of said materials; 3) the processing and packaging/baling of the finished materials; and 4) the storage of the finished material packaging/bales. Outdoor storage of such finished materials is not permitted due to their potential for weathering and degradation over time and the resultant contribution to potential windblown scatter onto adjacent properties.

HEARING ADMINISTRATOR'S CONSIDERATIONS

This is a conditional use permit request to operate a multi-use facility containing a landfill for construction and demolition materials, a composting operation for green waste, and a recycling facility. The project will also feature ongoing sand and gravel extraction operations. However, the latter are covered under the State of Arizona's mining exemption and are therefore not a part of this conditional use permit request.

Comprehensive Plan Considerations

The Pima County Comprehensive Plan (Pima Prospers) designates this property as *Low Intensity Rural (LIR)*, the purpose of which is "to designate areas for a mix of low-density housing types and other compatible uses."

Many non-residential uses have been approved in *LIU* districts in the past and have proven to coexist peacefully with their surroundings and to not impinge upon their neighbors. These include private schools, childcare centers, community service agencies, animal rescue shelters, commercial kennels, and communications towers. Such non-residential uses can effectively integrate into rural settings as long as appropriate safeguards and special conditions are put in place to address their operational particulars and potential impacts.

That being said, it is the Hearing Administrator's position that the proposed facility is not in conflict with the Pima Prospers as long as it is appropriately conditioned to operate within parameters that respect its surroundings.

Zoning and Surrounding Land Use Considerations

The subject parcel is zoned RH (Rural Homestead), as are all of those that adjoin it in every direction. On the west side of Wilmot Road (approximately ¼ mile to the west), the property is zoned SP (Specific Plan) and is intended as a solar farm.

The subject property is vacant, as are all of those that adjoin it every direction. Vacant private property exists to the immediate north. The site is surrounded by vacant State Land to the west, south, and east.

Considerations Regarding Proposed On-Site Land Uses & Operations

As mentioned earlier, the proposed sand-and-gravel extraction activities are exempt from local zoning authority by State of Arizona statutes. The proposed landfill for construction & demolition materials is a reasonable use of the large pits that will be created by the sand-and-gravel mining. The composting of green-waste (and the covering of finished landfill areas with such composting areas) represents a highly desirable use and an intelligent way to "finish" the landfill areas.

The proposed recycling facility, including the dumping, sorting, packaging/baling, and storage of recycled materials, raises certain issues which require special attention. While the Zoning Code does not specifically mention recycling facilities as a use, prior determinations by the Chief Zoning Inspector have indicated that they are appropriate within the CI-1 (Light Industrial/ Warehousing) zone. For this reason, the Hearing Administrator has determined that special conditions are required attendant to the establishment of a recycling facility on this RH-zoned property.

DEPARTMENTAL COMMENTS ON THIS REQUEST

Department of Environmental Quality

The Pima County Department of Environmental Quality (PDEQ) has reviewed the Fairfax Companies LLC Type III Conditional Use Permit (CUP) for a phased operation of recycling, sand and gravel extraction, construction and demolition (C&D) landfill and composting for an approximately 80.07-acre parcel (APN: 305-01-0030). The applicant proposes to use a portion of the site for commercial composting of green waste. PDEQ believes CUP conditions need to be added to ensure that the composting is done in a manner to minimize odors and the impacts to the environment. These conditions would include the identification of allowable feedstock, additives, and location of stock piles, as well as an Odor Control Plan (OCP) to control and minimize odors.

The plan would require the applicant to provide a description of operating procedures for minimizing odor including: aeration, moisture management, feedstock quality, drainage controls, pad maintenance, wastewater pond controls, storage practices (e.g., storage time and pile geometry), contingency plans (i.e., equipment, water, power, and personnel), biofiltration, and tarping as applicable. The OCP would be submitted for review and approval by PDEQ prior to commencement of composting operations.

PDEQ staff will work with applicant prior to final approval by the Board of Supervisors to develop the specific CUP conditions.

Department of Transportation

DOT has no objection to this conditional use permit. Wilmot Road has recently been paved in the vicinity of this project. It is a two lane paved roadway. This project may require turn lanes. Offsite improvements will be determined at the time of the development plan review.

Regional Flood Control District

No objection subject to approval of the Floodplain Use Permit, Riparian Mitigation Plan and submittal of a Development Concept Plan and Site Construction Permit.

Office of Sustainability & Conservation -- Environmental Planning (OSC-EP)

About 3.3 acres (or 4%) of the approximately 80-acre site lies within the Maeveen Marie Beehan Conservation Land System's (CLS's) *Important Riparian Area (IRA)* designation. Disturbances to these resources are regulated by the Regional Flood Control District (RFCD) according to the *Watercourse and Riparian Protection and Mitigation Requirements* of the Pima County Code, Title 16. In light of this, OSC-EP has no comments on, or objections to, this project.

HEARING ADMINISTRATOR'S RECOMMENDATION

After visiting the subject property and after considering all of the above and reviewing the applicant's submitted materials, the Hearing Administrator found the proposed **multi-use facility containing a landfill for construction and demolition materials, an on-going composting operation for green waste, and a recycling facility** to be an acceptable and appropriate use on the subject property and within the surrounding context, as long as appropriate special conditions are implemented to ensure its compatibility with the neighboring properties as they now stand and as they may be developed in the future.

It was therefore the recommendation of the Hearing Administrator that the Planning & Zoning Commission recommend **APPROVAL** of this Type III conditional use permit subject to the following Standard and Special Conditions:

Standard Conditions

The Zoning Code stipulates no standard conditions for this use, other than the requirement that a Type III conditional use permit must be obtained.

Special Conditions

1. This conditional use permit approval is for a multi-use facility containing a landfill for construction and demolition materials, a composting operation for green waste, and a recycling facility. No other non-residential or commercial/industrial uses other than the above are authorized or implied.

2. The attendant sand-and-gravel extraction operations are exempt from local zoning authority by State Statutes and are not a part of this conditional use permit approval.
3. A formal Development Plan and review process for the entire facility is hereby required in accordance with the requirements of Section 18.71 of the Zoning Code.
4. The applicant's submitted narrative, entitled "*The Fairfax Companies, LLC – Type III Conditional Use Permit (CUP): Project Narrative*", and dated November 11, 2017 is incorporated herein by reference and is considered a material part of this conditional use permit approval. The *Narrative* shall effectively serve as an operations manual for the facility and Pima County shall have enforcement authority to ensure that it is operated in substantial conformance with the *Narrative*.
5. In the event that the applicant or facility operator seeks in the future to materially diverge from the operational parameters outlined in the *Narrative*, they shall submit a revised *Narrative* to the Development Services Department (DSD), which *Narrative* shall be subject to review and acceptance by DSD.
6. With respect to the recycling facility, the following activities shall occur wholly within an enclosed building: 1) the acceptance and initial dumping of all materials that are prone to windblown scatter (e.g. loose paper and cardboard products); 2) the sorting of said materials; 3) the processing and packaging/baling of the finished materials; and 4) the storage of the finished material packaging/bales. Outdoor storage of such finished materials is not permitted due to their potential for weathering and degradation over time and the resultant contribution to potential windblown scatter onto adjacent properties.

SONORAN DESERT CONSERVATION CONCEPT PLAN/ENVIRONMENTAL ISSUES

Comprehensive Plan Regional Environmental Policies — Conservation Lands System

In December, 2001 the Board of Supervisors incorporated the Maeveen Marie Behan Conservation Lands System (MMB-CLS) into the Comprehensive Plan 2001 Update as the Regional Environmental Policies. The MMB-CLS is the heart of the Sonoran Desert Conservation Plan (SDCP). On June 21, 2005, the Board of Supervisors amended the Comprehensive Plan Regional Environmental Policies and the MMB-CLS to reflect recommendations from the SDCP Science Technical Advisory Committee that were based on new scientific and technical data. As adopted, Conservation Guidelines associated with the MMB-CLS establish conservation objectives for a variety of projects (e.g. rezoning actions, comprehensive plan amendments, Type II and Type III conditional use permits, etc.) that require a discretionary decision by the Board of Supervisors. Conservation objectives include:

1. Important Riparian Areas — 95% undisturbed natural open space
2. Biological Core Management Areas — 80% undisturbed natural open space
3. Special Species Management Areas — 80% undisturbed natural open space
4. Multiple Use Management Areas — 66-2/3% undisturbed natural open space

A portion of the property is subject to the Maeveen Marie Behan Conservation Lands System, this being the southwesternmost corner of the site, which is designated as an **Important Riparian**

Area (IRA). The remainder of the property is **OUTSIDE OF** the MMB-CLS. The applicant's submitted conceptual site plan appears to avoid the designated IRA on the site. Final determination of same and any associated CLS-related matters will be dealt with at the time of formal Development Plan review.

Biological Impacts Report

On July 17, 2001, the Board of Supervisors adopted Ordinance No. 2001-103, which requires the applicant's notice to the US Fish and Wildlife Service (USFWS) staff regarding the pending matter, and staff commentary on biological resources and development impacts of the subject site and proposal.

Staff Commentary on Biological Impacts

Staff has reviewed this application and finds that: 1) its approval is not expected to affect any resources essential to Pima County's biological conservation priorities; and 2) that it would not be in conflict with the Regional Environmental Policies of the 2001 Comprehensive Plan Update.

The applicant's submitted concept plan appears to avoid the only designated CLS area on the property (an *Important Riparian Area [IRA]* at its southwest corner), so it is expected that no new on-the-ground disturbance of important biological resources will occur. Final determination of same and all associated CLS-related matters will be dealt with at the time of formal Development Plan review.

Facts Confirmed by the Pima County Geographic Information System (GIS)

The following facts are confirmed by the Pima County GIS and the Sonoran Desert Conservation Plan maps with respect to this conditional use permit request:

Cactus Ferruginous Pygmy Owl. The subject property is located within an area that has high to medium habitat potential. This site is not located within the Priority Conservation Area (PCA) for this species.

Western Burrowing Owl. The subject property is located within a general area designated as having high to medium habitat potential for the Western Burrowing Owl; it is not within the Priority Conservation Area (PCA) for this species.

Pima Pineapple Cactus. The subject property is located within the known range of the Pima Pineapple cactus. It is within the Priority Conservation Area (PCA) for this species.

Needle-Spined Pineapple Cactus. The subject property is not located within an area that is within the known range of the Needle-Spined Pineapple cactus. It is not within the Priority Conservation Area (PCA) for this species.

DEPT. OF TRANSPORTATION RECOMMENDATION

See comments above (p. 5 of this staff report). The Department of Transportation will further review this project during the formal Development Plan review process.

REGIONAL FLOOD CONTROL DISTRICT RECOMMENDATION

See comments above (p. 5 of this staff report). The Flood Control District will further review this project during the formal Development Plan review process.

attachments

cc: Carla Blackwell, Director, Development Services
Dan Ice, Chief Building Official
Chris Poirier Planning Official
Tom Drzazgowski, Chief Zoning Inspector
The Fairfax Companies, LLC, Owner & Applicant, c/o Mr. Jason Tankersley
The Planning Center, c/o Mr. Brian Underwood, Consultant for Fairfax Companies, LLC

PIMA COUNTY DEVELOPMENT SERVICES REPORT TO THE PIMA COUNTY PLANNING & ZONING COMMISSION

CASE: **P17CU000011**
THE FAIRFAX COMPANIES, LLC — S. WILMOT ROAD

OWNERSHIP: The Fairfax Companies, LLC
1360 N. Kolb Road
Tucson, AZ 85715-4922

APPLICANT: The Fairfax Companies, LLC
c/o Mr. Jason Tankersley

Consultant for The Fairfax Companies, LLC:

The Planning Center
c/o Mr. Brian Underwood
2. E. Congress – Suite 600
Tucson, AZ 85701

LOCATION: The property is located at 11505 S. Wilmot Road (Assessors Parcel No. 305-01-0030). While the subject site is addressed of off Wilmot Road, it actually lies approximately one-quarter (1/4) mile east of same and is accessed by an existing public right-of-way that extends eastward from Wilmot Road. The property lies approximately one (1) mile south of the federal prison complex on Wilmot Road and is approximately five (5) miles north of Sahuarita Road.

REQUEST: This is a Conditional Use Permit request (Type III) for: **1) a landfill for construction and demolition materials; 2) composting operations; and 3) a recycling facility.** The facility will also feature ongoing sand and gravel extraction operations. However, these are covered under the State of Arizona's mining exemption and are therefore not a part of this conditional use permit request. The applicant has submitted a detailed narrative, along with a conceptual site plan, detailing all of the above activities and the manner in which they will occur on the property over time. The site is currently vacant, but there is some disturbance from prior sand and gravel operations in the past.

PETITIONER'S STATEMENT REGARDING THE TYPE OF USE PROPOSED

"Subsequent to the approved Riparian Mitigation Plans (refer to Activity No. P17RM00019) and Floodplain Use Permit (refer to Activity No. P17FC00535), the subject request proposes to utilize an approximately 80-acre parcel for a phased operation of sand and gravel extraction, construction and demolition (C&D) landfill, composting, and recycling."

PETITIONER'S STATEMENT REGARDING COMPATIBILITY

"Given the vacant nature of the surrounding properties and similar "RH" zoning, sand and gravel extraction, construction and demolition landfill, composting and recycling are appropriate uses for the surrounding area. Furthermore, the site formerly served as a sand and gravel operation making this an ideal location for the proposed uses. The Conceptual Site Plan and Phasing Plan demonstrate a site layout that is sensitive to the surrounding properties, hydrological features and riparian areas by providing appropriate buffers, screening and drainage structures as well as necessary phasing of the operations to mitigate adverse impacts associate with the proposed uses."

HEARING ADMINISTRATOR'S CONSIDERATIONS

This is a conditional use permit request to operate a multi-use facility containing a landfill for construction and demolition materials, a composting operation for green waste, and a recycling facility. The project will also feature ongoing sand and gravel extraction operations. However, the latter are covered under the State of Arizona's mining exemption and are therefore not a part of this conditional use permit request.

Comprehensive Plan Considerations

The Pima County Comprehensive Plan (Pima Prospers) designates this property as *Low Intensity Rural (LIR)*, the purpose of which is "to designate areas for a mix of low-density housing types and other compatible uses."

Many non-residential uses have been approved in *LIU* districts in the past and have proven to coexist peacefully with their surroundings and to not impinge upon their neighbors. These include private schools, childcare centers, community service agencies, animal rescue shelters, commercial kennels, and communications towers. Such non-residential uses can effectively integrate into rural settings as long as appropriate safeguards and special conditions are put in place to address their operational particulars and potential impacts.

That being said, it is the Hearing Administrator's position that the proposed facility is not in conflict with the Pima Prospers as long as it is appropriately conditioned to operate within parameters that respect its surroundings.

Zoning and Surrounding Land Use Considerations

The subject parcel is zoned RH (Rural Homestead), as are all of those that adjoin it in every direction. On the west side of Wilmot Road (approximately ¼ mile to the west), the property is zoned SP (Specific Plan).

The subject property is vacant, as are all of those that adjoin it every direction. Vacant private property exists to the immediate north. The site is surrounded by vacant State Land to the west, south, and east.

Considerations Regarding Proposed On-Site Land Uses & Operations

As mentioned earlier, the proposed sand-and-gravel extraction activities are exempt from local zoning authority by State of Arizona statutes. The proposed landfill for construction & demolition materials is a reasonable use of the large pits that will be created by the sand-and-gravel mining. The composting of green-waste (and the covering of finished landfill areas with such composting areas) represents a highly desirable use and an intelligent way to "finish" the landfill areas.

The proposed recycling facility, including the dumping, sorting, packaging/baling, and storage of recycled materials, raises certain issues which require special attention. While the Zoning Code does not specifically mention recycling facilities as a use, prior determinations by the Chief Zoning Inspector have indicated that they are appropriate within the CI-1 (Light Industrial/ Warehousing) zone. For this reason, the Hearing Administrator has determined that special conditions are required attendant to the establishment of a recycling facility on this RH-zoned property.

DEPARTMENTAL COMMENTS ON THIS REQUEST

Department of Transportation

DOT has no objection to this conditional use permit. Wilmot Road has recently been paved in the vicinity of this project. It is a two lane paved roadway. This project may require turn lanes. Offsite improvements will be determined at the time of the development plan review.

Regional Flood Control District

No objection subject to approval of the Floodplain Use Permit, Riparian Mitigation Plan and submittal of a Development Concept Plan and Site Construction Permit.

Office of Sustainability & Conservation -- Environmental Planning (OSC-EP)

About 3.3 acres (or 4%) of the approximately 80-acre site lies within the Maeveen Marie Beehan Conservation Land System's (CLS's) *Important Riparian Area (IRA)* designation. Disturbances to these resources are regulated by the Regional Flood Control District (RFCD) according to the *Watercourse and Riparian Protection and Mitigation Requirements* of the Pima County Code, Title 16. In light of this, OSC-EP has no comments on, or objections to, this project.

HEARING ADMINISTRATOR'S RECOMMENDATION

After visiting the subject property and after considering all of the above and reviewing the applicant's submitted materials, the Hearing Administrator finds the proposed **multi-use facility containing a landfill for construction and demolition materials, an on-going composting operation for green waste, and a recycling facility** to be an acceptable use on the subject

property and within the surrounding context, as long as appropriate special conditions are implemented to ensure its compatibility with the neighboring properties as they now stand and as they may be developed in the future.

It is therefore the recommendation of the Hearing Administrator that the Planning & Zoning Commission recommend **APPROVAL** of this Type III conditional use permit subject to the following Standard and Special Conditions:

Standard Conditions

The Zoning Code stipulates no standard conditions for this use, other than the requirement that a Type III conditional use permit must be obtained.

Special Conditions

1. This conditional use permit approval is for a multi-use facility containing a landfill for construction and demolition materials, a composting operation for green waste, and a recycling facility. No other non-residential or commercial/industrial uses other than the above are authorized of implied.
2. The attendant sand-and-gravel extraction operations are exempt from local zoning authority by State Statutes and are not a part of this conditional use permit approval.
3. A formal Development Plan and review process for the entire facility is hereby required in accordance with the requirements of Section 18.71 of the Zoning Code.
4. The applicant's submitted narrative, entitled "*The Fairfax Companies, LLC – Type III Conditional Use Permit (CUP): Project Narrative*", and dated November 11, 2017 is incorporated herein by reference and is considered a material part of this conditional use permit approval. The *Narrative* shall effectively serve as an operations manual for the facility and Pima County shall have enforcement authority to ensure that it is operated in substantial conformance with the *Narrative*.
5. In the event that the applicant or facility operator seeks in the future to materially diverge from the operational parameters outlined in the *Narrative*, they shall submit a revised *Narrative* to the Development Services Department (DSD), which *Narrative* shall be subject to review and acceptance by DSD.
6. With respect to the recycling facility, the following activities shall occur wholly within an enclosed building: 1) the acceptance and initial dumping of all materials that are prone to windblown scatter (e.g. loose paper and cardboard products); 2) the sorting of said materials; 3) the processing and packaging/baling of the finished materials; and 4) the storage of the finished material packaging/bales. Outdoor storage of such finished materials is not permitted due to their potential for weathering and degradation over time and the resultant contribution to potential windblown scatter onto adjacent properties.

SONORAN DESERT CONSERVATION CONCEPT PLAN/ENVIRONMENTAL ISSUES

Comprehensive Plan Regional Environmental Policies — Conservation Lands System

In December, 2001 the Board of Supervisors incorporated the Maeveen Marie Behan Conservation Lands System (MMB-CLS) into the Comprehensive Plan 2001 Update as the Regional Environmental Policies. The MMB-CLS is the heart of the Sonoran Desert Conservation Plan (SDCP). On June 21, 2005, the Board of Supervisors amended the Comprehensive Plan Regional Environmental Policies and the MMB-CLS to reflect recommendations from the SDCP Science Technical Advisory Committee that were based on new scientific and technical data. As adopted, Conservation Guidelines associated with the MMB-CLS establish conservation objectives for a variety of projects (e.g. rezoning actions, comprehensive plan amendments, Type II and Type III conditional use permits, etc.) that require a discretionary decision by the Board of Supervisors. Conservation objectives include:

- Important Riparian Areas — 95% undisturbed natural open space
- Biological Core Management Areas — 80% undisturbed natural open space
- Special Species Management Areas — 80% undisturbed natural open space
- Multiple Use Management Areas — 66-2/3% undisturbed natural open space

A portion of the property is subject to the Maeveen Marie Behan Conservation Lands System, this being the southwesternmost corner of the site, which is designated as an **Important Riparian Area (IRA).** The remainder of the property is **OUTSIDE OF** the MMB-CLS. The applicant's submitted conceptual site plan appears to avoid the designated IRA on the site. Final determination of same and any associated CLS-related matters will be dealt with at the time of formal Development Plan review.

Biological Impacts Report

On July 17, 2001, the Board of Supervisors adopted Ordinance No. 2001-103, which requires the applicant's notice to the US Fish and Wildlife Service (USFWS) staff regarding the pending matter, and staff commentary on biological resources and development impacts of the subject site and proposal.

Staff Commentary on Biological Impacts

Staff has reviewed this application and finds that: 1) its approval is not expected to affect any resources essential to Pima County's biological conservation priorities; and 2) that it would not be in conflict with the Regional Environmental Policies of the 2001 Comprehensive Plan Update.

The applicant's submitted concept plan appears to avoid the only designated CLS area on the property (an *Important Riparian Area [IRA]* at its southwest corner), so it is expected that no new on-the-ground disturbance of important biological resources will occur. Final determination of same and all associated CLS-related matters will be dealt with at the time of formal Development Plan review.

Facts Confirmed by the Pima County Geographic Information System (GIS)

The following facts are confirmed by the Pima County GIS and the Sonoran Desert Conservation Plan maps with respect to this conditional use permit request:

Cactus Ferruginous Pygmy Owl. The subject property is located within an area that that has a high to medium habitat potential. This site is not located within the Priority Conservation Area (PCA) for this species.

Western Burrowing Owl. The subject property is located within a general area designated as having high to medium habitat potential for the Western Burrowing Owl; it is not within the PCA for this species.

Pima Pineapple Cactus. The subject property is located within the known range of the Pima Pineapple cactus. It is within the PCA for this species.

Needle-Spined Pineapple Cactus. The subject property is not located in an area that is within the known range of the Needle-Spined Pineapple cactus. It is not within the PCA for this species.

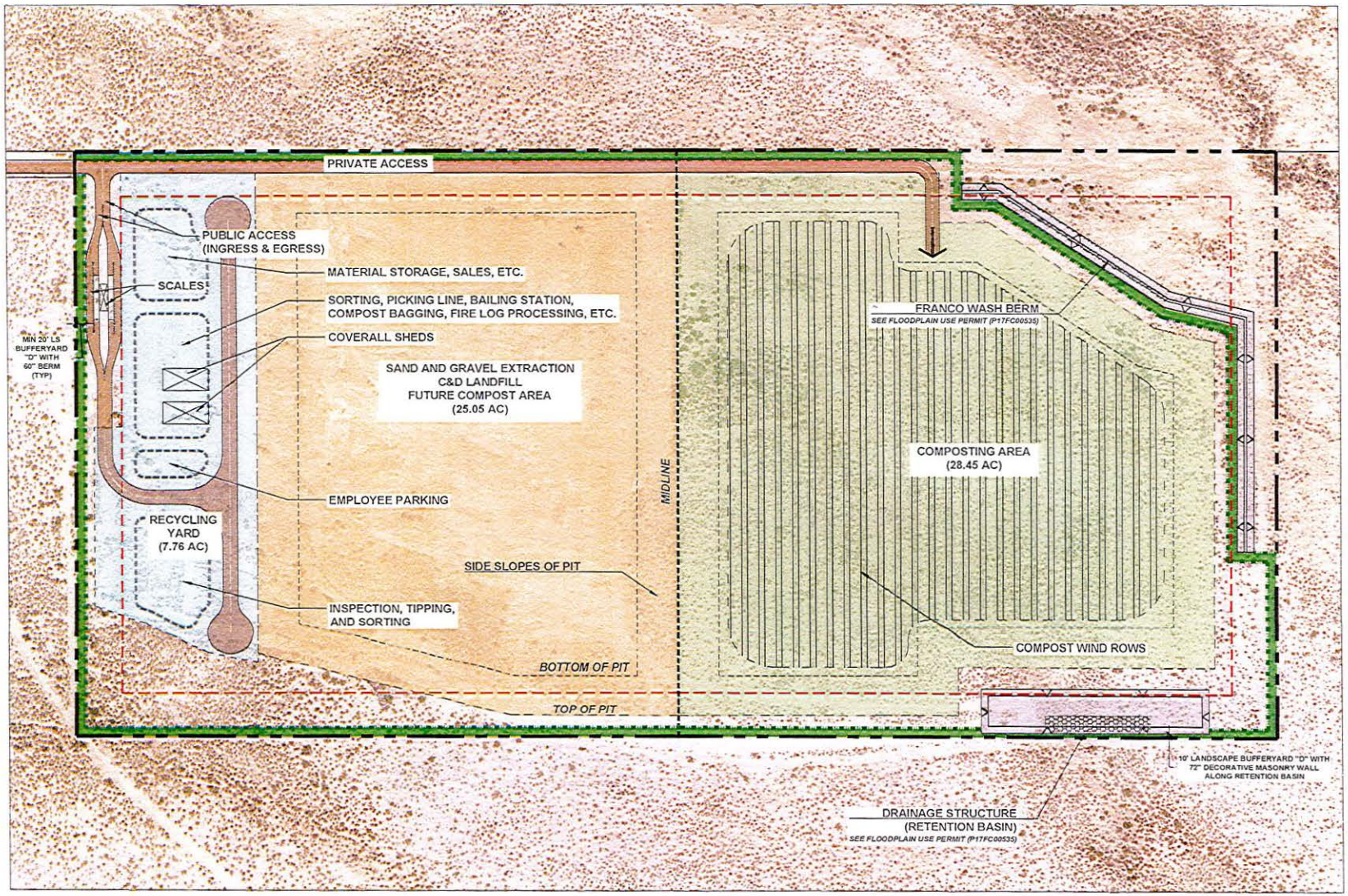
DEPT. OF TRANSPORTATION RECOMMENDATION

The Department of Transportation will review this project during the formal Development Plan review process.

attachments

cc: Carla Blackwell, Director, Development Services
Dan Ice, Chief Building Official
Chris Poirier Planning Official
Tom Drzazgowski, Chief Zoning Inspector
The Fairfax Companies, LLC, Owner & Applicant, c/o Mr. Jason Tankersley
The Planning Center, c/o Mr. Brian Underwood, Consultant for Fairfax Companies, LLC

SITE PLAN



LEGEND

- PROPERTY BOUNDARY
- SAND AND GRAVEL EXTRACTION, C& D LANDFILL AND FUTURE COMPOST AREA
- RECYCLING YARD
- COMPOSTING AREA
- OPEN SPACE (INCLUDES ACREAGE UTILIZED FOR DRAINAGE)
- 100' MATERIAL SETBACK
- 20' LANDSCAPE BUFFERYARD "D" (60" BERM)

NOTES:

APN: 305-01-0030
SITE AREA = ± 80.07 ACRES
RIPARIAN MITIGATION: PLEASE REFER TO RHMP (P17RM00019)

THE CONSTRUCTION & DEMOLITION (C&D) LANDFILL WILL RECEIVE LANDSCAPE, CONSTRUCTION AND DEMOLITION DEBRIS, WHICH TYPICALLY CONSISTS OF ROADWAY MATERIAL, EXCAVATED MATERIAL, DEMOLITION WASTE, AND SITE CLEARANCE/ YARD/LANDSCAPE WASTE. THIS LANDFILL WILL NOT RECEIVE HOUSEHOLD GARBAGE, OR INDUSTRIAL SOLD WASTE.

PHASING:

1. DRAINAGE STRUCTURE (RETENTION BASIN) CONSTRUCTED PRIOR TO EXTRACTION.
2. SAND AND GRAVEL EXTRACTION AND C&D LANDFILL TO OCCUR IN 7-10 ACRE INCREMENTS FROM WEST TO EAST, STARTING AT THE EASTERN EDGE OF THE RECYCLING YARD.
3. COMPOSTING TO SIMULTANEOUSLY OCCUR FROM THE EASTERN EDGE OF SAND AND GRAVEL AND C&D LANDFILL OPERATIONS TO THE EASTERNMOST PROPOSED PIT LIMITS.
4. ONGOING COMPOSTING OPERATION TO OCCUR ON EACH 7-10 ACRE INCREMENT ONCE LANDFILLING IS COMPLETE.

THE FAIRFAX COMPANIES, LLC

THIS EXHIBIT WAS CREATED USING THE MOST RECENT AVAILABLE BOUNDARIES, ROAD ALIGNMENT, AND EASEMENT DATA PROVIDED BY THE DIFFERENT GOVERNMENTAL ENTITIES AND ENGINEERING FIRMS AND IS FOR PLANNING PURPOSES ONLY. FINAL AREA TOTALS BASED ON ENGINEERED DATA MAY VARY FROM THOSE SHOWN ON THIS EXHIBIT.

0' 100' 200' SCALE

PROJECT: RFF-14 DATE: 11/07/17
FILE NAME: RFF-14_SITE PLAN_110617.DWG

The Fairfax Companies LLC - Type III Conditional Use Permit (C.U.P.): Project Narrative

The Fairfax Companies, LLC is pleased to submit this application for your consideration to process a Type III Conditional Use Permit for an approximately 80.07-acre parcel (APN: 305-01-0030) located at 11505 South Wilmot Road in Township 16 South, Range 15 East, Section 18 for the development of a phased recycling, sand and gravel extraction, construction and demolition (C&D) landfill and composting operation. The subject property is zoned RH (Rural Homestead) and is designated by *Pima Prospers* as LIR (Low Intensity Rural).

Required Approvals and Permitting

The following describes the necessary approvals and permits required for the proposed operation.

1. Floodplain Use Permit – the applicant applied for and was issued a floodplain use permit (refer to activity number: P17FC00535) on August 31, 2017 by Pima County.
2. Riparian Habitat Mitigation Plan – the applicant submitted a revised riparian habitat mitigation plan and was conditionally approved (refer to activity number: P17RM00019) on August 31, 2017 by Pima County.
3. Solid Waste Facility Plan /Aquifer Protection Permit (AAP) – issuing agent Arizona Department of Environmental Quality (AZDEQ).
4. Air Quality Activity Permit (Fugitive Dust) – issuing agent Pima County Department of Environmental Quality (PCDEQ).
5. Air Quality General Permit for Crushing and Screening Plants – issuing agent Arizona Department of Environmental Quality (AZDEQ).
6. AZDPES 2010 Multi-Sector General Permit (MSGP) 2010-002 - issuing agent Arizona Department of Environmental Quality (AZDEQ).

The applicant is seeking to obtain a Type III Conditional Use Permit (CUP) for a phased operation of recycling, sand and gravel extraction, construction and demolition (C&D) landfill and composting. An approved CUP will be needed to garner approval for permits 3-6 above. As demonstrated on the Conceptual Site Plan, the site has been configured in such fashion cognizant of the surrounding properties, hydrological features, and important riparian areas by providing appropriate buffers, screening and drainage infrastructure, as well as appropriate phasing to allow simultaneous use of the site for each of the proposed operations. The following offers a brief description of the general facility design, site circulation, operations, hours of operation, potential collectible materials, control measures and on-going monitoring.

Facility Design

The proposed site plan is approximately 80.07 acres in size. Of the total site area, approximately 57.4 acres will operate within the waste (pit) limits as an active landfill and composting area. An approximately 7.76-acre area located on the western boundary of the subject area will be designated for recycling activities. A drainage structure (retention basin) will be constructed in the southeast corner of the subject area to ensure off/on-site drainage exits the property in the same location and volume as in the pre-development condition. Additionally, a concrete berm will be installed adjacent to the Franco Wash to mitigate

potential flooding and preserve the integrity of the riparian area located in the northeast portion of the property.

Site Circulation

- *Off-Site Circulation*

The site is located at 11505 South Wilmot Road and will be accessed via a public right-of-way at the northwest corner of the subject property. Given that the majority of the adjacent properties remain vacant, it is anticipated that the expected increase in average daily trips is negligible; therefore, a traffic impact statement is not required.

- *On-Site Circulation*

Upon entering the site from South Wilmot Road, customers will procced south on a public access road to weigh stations and scales located along the western property boundary. Once materials have been weighed and inspected, customers will then proceed to the recycling yard, processing area and coverall sheds to dump materials. Customers will then exit the site via the public access drive they entered the site on. The eastern portion of the site will be accessed via a private access driveway that will not be made available for public access.

Operations

- *Excavation Operation* – the waste (pit) limits will be excavated in seven-acre to ten-acre increments from the west side of the site to an overall average depth ranging from 84 feet to 102 feet with 2:1 side slopes. Once the permitted excavation depths have been achieved for each of the phasing areas and prior to any filling, the excavation site must be prepared and lined with a geosynthetic clay liner and a 24-inch foundation layer to prevent damage from materials and equipment during operations.

- *Construction and Demolition (C&D) Landfill Operations* – the landfilling operations will occur in six phases. Phases 1-4 consist of incremental excavation and filling of seven to ten-acre areas starting at the western portion (eastern edge of recycling yard) of the waste (pit) limits moving east. Phases 5-6 include incrementally excavating and filling seven-acre areas from the edge of the Phase 4 area to the eastern waste (pit) limits. When phasing areas are not actively being excavated/filled, they will be used for composting operations. Construction debris and other debris will be dumped and sorted in coverall sheds (refer to *Figure 1* and *Figure 2*) for recycling and to screen for prohibited materials. Prohibited items will be placed into roll-off containers and taken offsite to a proper disposal facility. Metals and other materials that cannot be used on site will be sorted, put into roll-off containers and removed from the site. Recyclable materials will be compacted and formed into bales and transported offsite. Items that cannot be recycled will be crushed, grinded or shredded and subsequently landfilled. Unrecyclable materials that are landfilled are generally spread in 2-foot thick layers, approximately 60 feet wide and are covered with adequate compacted cover soil or alternative daily cover. Once the entire phased area is filled to permitted levels, the filled area will be covered with an 18-inch thick layer of cover soil

overlain by a 12-inch thick layer of vegetation/erosion soil. Necessary drainage facilities will be incorporated throughout the phased filling sequence to prevent stormwater discharge.

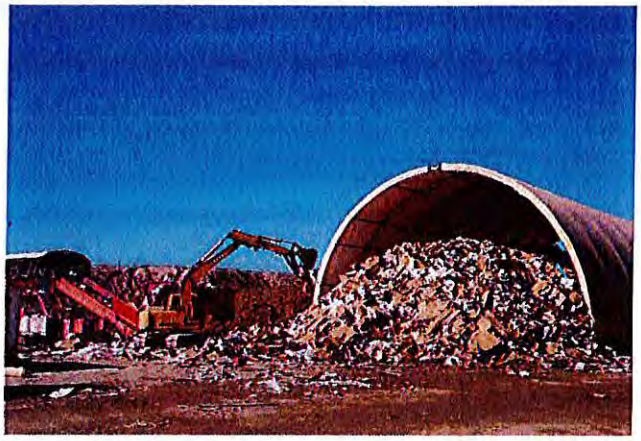


Figure 1: Coverall Sheds

Figure 2: Sorting Process in Coverall Shed

Figure 3: Filling Process

- *Green Waste Operation* – Green waste is collected, separated and processed into either alternative daily cover, value-added landscape materials or garden product, or biomass for renewable energy sources. The green waste is stockpiled into a series of windrows which are approximately 8-14 feet tall (refer to *Figure 4: Compast Windrows*).

Figure 4: Compost Windrows

- *Single Stream Recycling Operations* – commingled recyclable materials are processed through the sort line and baled for shipping or stored in coverall sheds on-site until sufficient volume is available for baling and export. Once baled and ready for export, the single stream material is sold to recyclers and transferred to the ReCommunity Materials Recovery Facility (MRF) (a Tucson facility that separates and compacts solid waste materials for recycling and other uses) for additional processing.

Operating Days and Hours

General hours of operation are between 7:00 AM and 7:00 PM, Monday through Saturday, but the facility will be closed to the public before 7:00 AM and after 5:00 PM. Maintenance may occur from 5:00 PM to 7:00 PM. Sundays will be closed to the public and reserved for equipment and facility maintenance between 7:00 AM and 7:00 PM.

Potential Collectable Materials

- *Construction and Demolition Debris* – brick, concrete, drywall, stone, glass, rock, framing and finishing lumber, roofing materials, plumbing fixtures, appliances, wiring, carpet, asphaltic substances, metals, and vegetative waste.

- *Green Waste* – Landscaping debris and other compostable materials

- *Recyclables* – aluminum cans, brass, certain plastics, paper, cardboard and aluminum

Landfill Control Measures

- *Litter Control* – a series of litter control methods will be implemented to minimize nuisances and maintain the appearance of the facility. Such methods may include but are not limited to:
    - Active working face of landfill to be as small as practical to minimize the potential for wind-blown litter.
    - Debris placed on the working face will be continually compacted to reduce potential for wind-blown litter.
    - Active portions of the landfill will be permanently fenced in and portable litter fencing will be installed down-wind.
    - Immediate application of daily cover to ensure debris containment.
    - Employees will regularly inspect and police the site for debris and litter.
    - Materials will be stored in covered shelters (coveralls).

- *Noise Control* – a series of control measures will be implemented to mitigate noise. Such measures may include but are not limited to:
    - General hours of operation will be limited to Monday through Saturday 7:00 AM to 7:00 PM. Sundays will be closed to the public and reserved for equipment and facility maintenance.
    - Crushing operations must be surrounded by noise barriers which consist of stockpiled materials.
    - Installation of constructed berms reduces noise traveling off-site.

- *Dust Control* - a series of control measures will be implemented for dust abatement. Such measures may include but are not limited to:
    - The main access road will be paved to the scales and then decomposed granite will extend for a specified distance beyond the scales.
    - Haul roads will be regularly graded and watered.
    - Sprinklers, water trucks, fans with built in misting systems, etc. will be installed to control during the baling process.
    - Fine water spray on soil stockpiles and soil-covered work will reduce fugitive dust.
    - Planting and maintenance of the landscape border.
    - Coveralls will be equipped with sprinkling systems and used during the sorting process.

- *Odor Control* – waste collected at this facility will not typically include food wastes which cause odors. However, odor will be mitigated utilizing the following methods:
    - Timely placement and compaction of daily, intermediate, and final cover soil.
    - Minimizing the size of the working face.
    - Placement of cover materials over exposed debris following each operation day.
    - Covering of uncommonly odorous waste immediately upon receipt.

- *Fire Control* – potential for fire hazard will be mitigated by:

- Frequently removing debris and dust from undercarriages and engine components in landfill equipment and vehicles.
- Checking for and repairing oil and fuel leaks.
- Providing portable fire extinguishers in landfill equipment.

- *Access Control* – The entire property will be surrounded with perimeter fencing to prevent illegal disposing. "No Trespassing" signs will be posted along the perimeter fencing at intervals to identify the perimeter boundary. The entrance to the facility will be gated and locked after hours.

Monitoring

As part of the normal operations at the facility, trained personnel will regularly monitor the environmental control facilities to ensure their proper operation and maintenance. Such monitoring includes:

- *Groundwater Monitoring* – A series of groundwater wells will be constructed to monitor groundwater. Groundwater will be monitored on a semi-annual basis and reports will be generated annually.

- *Stormwater Monitoring* – A stormwater pollution plan will be implemented. Stormwater monitoring will include weekly to monthly inspections of the active area of the landfill, depending on the seasonal precipitation levels. Annual inspections are required to inspect all measures included in the plan. Additionally, an inspection will be required within 24 hours after a major rain event.

- *Landfill Gas Monitoring* – A series of monitoring wells will be installed at varying depths to monitor the methane gas hazard potential. The gas monitoring system and monitoring frequency will be reviewed periodically and revised based on monitoring results.

- *Leachate Monitoring* – If found to be applicable, a leachate monitoring system will be implemented. However, due to the nature of the materials being collected, low annual rainfall and high pan evaporation rates, it is anticipated that a leachate monitoring system will not be needed for this site.

SOLID WASTE FACILITY PLAN / INDIVIDUAL AQUIFER PROTECTION PERMIT APPLICATION

WILMOT RECYCLING AND LANDFILL FACILITY

PIMA COUNTY, ARIZONA

Prepared for

FAIRFAX COMPANIES, L.L.C.

DRAFT November 8, 2017

Prepared by

AMTECH Associates, L.L.C.
8666 East San Alberto Drive
Scottsdale, Arizona 85258

Project No. 1003.05

AMTECH

SOLID WASTE FACILITY PLAN / INDIVIDUAL AQUIFER PROTECTION PERMIT APPLICATION
WILMOT RECYCLING AND LANDFILL FACILITY
FAIRFAX COMPANIES, L.L.C.
PIMA COUNTY, ARIZONA

The material and data in this report were prepared under the supervision and direction of the undersigned.

AMTECH Associates, L.L.C.

_____
Tamara Jim, Project Engineer

_____
Syed S. Amanatullah, P.E.
Managing Member

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Appendix A – Individual APP Amendment Application Form

Appendix B – Facility Drawings

Appendix C – Facility Design Drainage Calculations

1 INTRODUCTION

On behalf of Fairfax Companies, L.L.C. (Fairfax), AMTECH Associates, L.L.C. (AMTECH) has prepared this request to the Arizona Department of Environmental Quality (ADEQ) to obtain approval for a Solid Waste Facility Plan (SWFP)/Aquifer Protection Permit (APP) for the Wilmot Recycling and Landfill Facility (WRLF).

This document will include the required attachments for the SWFP/APP Application. The APP application form and application checklist are provided in **Appendix** A.

1.1 Organization of this Application Document

The following is an overview of the organization of this application document:

Section 1 – Introduction – This section introduces the facility and the organization of the application document.

Section 2 – General Information – This section provides general information regarding the applicant, owner, and operator, as well as provides certain required information regarding owner and facility compliance history. This section also includes a summary of the closure, post closure care costs, and financial assurance demonstration.

Section 3 – Site Characterization – This section provides general information regarding the site physiography, geology, hydrogeology, hydrology information.

Section 4 – Proposed Facility Design and Operation – This sections reviews site location, physiography and layout, as well compliance with location restrictions for the facility, and best available demonstrated control technology. The major design and operations for the facility are also reviewed.

Section 6 – Demonstration of Compliance with Standards – This section discusses the discharge impact area, points of compliance, groundwater monitoring, evaluation of compliance, and contingency plan information.

Section 7 – This section contains a listing of document references.

2 GENERAL INFORMATION

The WRLF is proposed as an active, recycling facility and non-municipal solid waste landfill (non-MSWLF). Waste materials accepted at this proposed non-MSWLF may include inert materials and construction and debris (C&D) materials. The expected operational life of the facility is anticipated to be at least 50 years.

2.1 Permittee Information

The following summarizes permittee information, including the facility name and location in addition to the entities that own and operate the SRLF.

Facility Name: Wilmot Recycling and Landfill Facility
Permittee Name: The Fairfax Companies, L.L.C.
Mailing Address: 1360 N. Kolb Rd., Tucson, AZ 85715
Permittee/Facility Contact: Jason Tankersley (520) 290-9313

Facility Street Address: 11505 S. Wilmot Road, Tucson, AZ 85756
Facility Contact: Jason Tankersley (520) 290-9313
Emergency Telephone Number: (520) 290-9313

Land Owner: The Fairfax Companies, L.L.C.
Land Owner Mailing Address: 1360 N. Kolb Rd., Tucson, AZ 85715

2.2 Legal Description

The WRLF is located on Pima County parcel No. 305-01-0030 and has the following legal description: Southeast quarter of the northwest quarter, and the southwest quarter of the northeast quarter, of Section 18, Township 16 south, Ranges 15 east, Gila and Salt River Base and meridian, Pima County, Arizona.

2.3 Technical Capability

Fairfax also owns and operates the Speedway Landfill and Recycling Facility (SLRF) located in Tucson, Arizona, that operates under APP No. P-102859.05 originally issued in 1995. The proposed operations at the WRLF will be almost identical to the existing operations at the SLRF. As such, Fairfax has the technical and maintenance capabilities to ensure all site operations will carry out the terms of an approved permit. Fairfax's technical personnel and consultants will provide support to the WRLF's maintenance and operations personnel to ensure the facility is maintained and operated in compliance with all safety and environmental regulations.

2.2.1 Consultants

Fairfax retained AMTECH as consultants to this project. A brief description of the responsibilities and technical capabilities has been included in this section.

AMTECH is an engineering firm specializing in the field of environmental management. AMTECH was founded in 2005, with a main office located in Scottsdale, Arizona. AMTECH's staff is comprised of trained and experienced personnel including civil and environmental engineers specializing in the environmental area.

AMTECH provides engineering services to municipalities, private industry, military installations, and governmental agencies for a variety of environmental management projects. Professional engineering services provided by AMTECH include planning, feasibility investigations, conceptual design, siting, final engineering design, permitting, construction, construction oversight, and long-term monitoring.

AMTECH will provide consulting services for WLRF as they relate to compliance and engineering related services. AMTECH is a full service engineering consulting firm specializing in environmental management. AMTECH will provide training, engineering services, construction oversight as required, and compliance monitoring of the SL as required.

Syed S. Amanatullah and Tamara Jim have been identified as consultant contacts in the APP Application.

Syed S. Amanatullah, P.E., Engineering Manager

Mr. Amanatullah is a registered professional engineer with over 35 years of professional experience in environmental and civil engineering fields; groundwater management for the pulp and paper, solid waste and mining industries, the Arizona Department of Environmental Quality (ADEQ), consulting firms, and the academic sector. This experience includes designing various landfills, hydraulic structures, the development and management of programs in groundwater assessment and monitoring, aquifer protection permitting, drainage designs, hydrologic modeling, plan approvals for water and wastewater facilities, solid wastes planning, and preparation of pollution prevention, waste characterization and minimization, best management and spill prevention plans.

Tamara M. Jim, Project Engineer

Ms. Jim is a degreed civil engineer with over 19 years of experience in the environmental and engineering fields. This experience includes groundwater monitoring, aquifer protection permitting, and plan approvals for solid waste facilities, solid wastes planning, and facility spill prevention plans.

2.4 Certificate of Disclosure

Fairfax will prepare a restrictive covenant for the facility in accordance with ARS §49-771, stating that the intent for the property is to be used as a solid waste landfill.

2.5 List of Local Approvals and Environmental Permits

This section will contain a listing of local approvals as well as other environmental permits obtained for the WRLF.

2.6 Closure and Post-Closure

This section will present the Closure and Post-Closure activities for the proposed facility in accordance with A.A.C. R18-9-A209.

2.2.2 Closure Activities

The final grading and drainage plan for the site following closure of the facility is presented in **Drawing 4**. The contoured surface of the completed landfill will be revegetated with a hydroseed mix and native plants/trees to blend with surrounding areas. As areas of the landfill are filled into the final grades, final cover will be applied to provide a total soil cover thickness of 2.5 feet over the refuse fill. The final cover will consist of, from bottom to top:

- Infiltration layer with 18-inch thickness
- Erosion layer with 12-inch thickness

The final cover will be constructed consistent with the Final Cover Construction Quality Assurance/Control Manual. The infiltration layer will have a hydraulic conductivity less than or equal to 1×10^{-4} cm/sec.

Equipment and Structure Removal

Rolling stock used at the landfill (scrapers, dozers, grader, etc.) that will not regularly be required for post-closure maintenance will be removed from the site. The truck scale and related equipment will be salvaged. Access controls and other environmental monitoring systems will remain on-site, as required.

Prior to facility closure, Fairfax will submit a notification of closure and upon completion of closure activities, a certification report verifying will be submitted that closure of the facility was completed in accordance with the approved closure plan. The certification will be based upon a review performed by a qualified professional engineer, registered in Arizona.

2.2.3 Post-Closure Activities

This section will present the Post-Closure activities for the proposed facility in accordance with A.A.C. R18-9-A209.

This section will present the demonstration of financial requirements in accordance with A.A.C. R18-9-A203 necessary to demonstrate that Fairfax is financially capable to construct operate, close, and assure proper post-closure care of the proposed facilities.

2.7 Closure and Post-Closure Cost Estimates

This section will present the cost estimates for closure and post-closure care for the proposed facility in accordance with A.A.C. R18-9-A201(B)(5). Closure and post closure cost estimates were derived from third-party estimates, specific either to the SRLF or to similar projects (i.e., landfill closure and post-closure activities). Closure and 30-year post-closure cost estimates are presented in **Table 1** and **Table 2**, respectively.

2.8 Financial Capability Demonstration

In accordance with A.A.C. R18-9-A203, Fairfax will provide a financial assurance mechanism to cover the financial assurance obligation under R18-9-A201(B)5.

3 SITE CHARACTERIZATION

The proposed primary function of the facility will include landfilling and recycling of construction and demolition debris (C&D) and landscape waste. Fairfax is working toward boosting recycling of these materials and becoming a national leader in sustainable practices in the reuse of these materials through sales, recycling, and the production of renewable energy.

3.1 Site Location and Physiography

The WRLF is located within Pima County at 11505 S. Wilmot Road, Tucson, AZ 85756, See **Figure 1** (Attached). Access to the facility would occur off of Wilmot Road. The WRLF has the following legal description: Southeast quarter of the northwest quarter, and the southwest quarter of the northeast quarter, of Section 18, Township 16 south, Ranges 15 east, Gila and Salt River Base and meridian, Pima County, Arizona. The approximate latitude and longitude are North 32° 02' 35" and West 110° 51' 02", respectively.

The WRLF is located in the Upper Santa Cruz Basin of Arizona's Basin and Range Province. The Santa Catalina Mountains are located just to the north and the Rincon Mountains to the southeast. The area surrounding the facility is largely undeveloped land. The facility also borders the City of Tucson on the west, north, and south boundaries.

3.2 Hydrogeologic Study

The APP program includes requirements for submittal of discretionary information. The majority of discretionary information pertains to the hydrogeologic setting of the facility. The hydrogeologic section of this application contains results of a review of existing information concerning geology, hydrogeology, and surface water.

3.3 Geology

This section addresses regional geology, local geology, local soils, and regional seismicity and faulting in the vicinity of the subject property.

Regional Geology

The subject property is located in the northeastern portion of the Tucson Basin in the Basin and Range Physiographic Province, in Pima County, Arizona. The Basin and Range Physiographic Province is characterized by rugged mountains that rise abruptly above broad and gently sloping basins. The Basin and Range topography was created by cenozoic block faulting and the accumulation of sedimentary valley fill (Anderson, 1987).

Alluvial deposits across southern Arizona are typically heterogeneous and represent a complex mosaic of sedimentary facies, including coarse-grained channel lag and braided stream deposits, as well as floodplain and lacustrine silts and clays.

Steep-sided, linear mountain ridges are situated to either side of flat, alluvial basins these basins are filled with thick, unconsolidated sequences of mixed fluvial sediments. Late Tertiary, Quaternary, and sediments eroded and derived from these uplifted mountains, have accumulated to produce a thick sequence of largely unconsolidated gravels, sands, silts, and clays.

Coarse sands and gravels characterize alluvial fans located at the base of the steep, uplifted mountains. Sediment grain size grades inward, toward the center of the basin valley, from sand and fine-grained sand units to silts and clays. The center of the basin is often a mixed package of hetrolithic units which reflect the varying intensities of erosion and mixing during the depositional period.

The Tucson Basin is a broad 1,000 square mile area in the Upper Santa Cruz River Drainage area. The basin is bounded on the east and north by the Santa Rita, Empire, Rincon, Tanque Verde, Santa Catalina, and the Tortolita Mountains. The basin is bounded on the west by the Sierrita, Black, and Tucson Mountains (Davidson, 1973). The mountains consist of precambrian to tertiary age igneous, metamorphic, and sedimentary rock. The sediment filled structural basin trends north to northwest, and has three major stratigraphic units. These units are the Pantano formation of Oligocene age, the Tinaja Beds of Miocene and Pliocene age, and the Fort Lowell Formation of Pleistocene age (Anderson, 1987).

3.4 Regional Hydrogeology

The subject property is located in the Tucson Sub-basin of the Upper Santa Cruz Basin, within the boundaries of the area designated by the Arizona Department of Water Resources (ADWR) as the Tucson Active Management Area (AMA). The Upper Santa Cruz Basin consists of approximately 3,160 square miles and extends from the Mexico-United States border to Cortaro, in the north (Murphy and Hedley, 1984). The Upper Santa Cruz Basin is bounded on the north by the Tortolita and Santa Catalina Mountains, and on the east by the Tanque Verde, Rincon, Empire, Santa Rita, Whetstone, San Cayetano, Patagonia, Huachuca Mountains, and the Canela Hills. On the west side, the Basin is bounded by Black Mountain, and the Tucson, Sierrita, Cerro Colorado, Tumacacori, Atascosa, and Pajarito Mountains.

Groundwater in the Upper Santa Cruz Basin occurs in the basin-fill alluvial deposits. In general, groundwater in the Basin occurs under unconfined conditions; however, confined conditions and perched groundwater also occur in some areas within the Basin (Murphy and Hedley, 1984).

The Tucson Sub-basin of the Upper Santa Cruz Basin extends from Pima Mine Road northwards to the north end of the Basin. The major lithologic units combine to form a single aquifer that extends across the Sub-basin. The aquifer is comprised of the Fort Lowell Formation, the Tinaja Beds, and the Pantano Formation. The Fort Lowell Formation provides most of the groundwater that is withdrawn from the Sub-basin. The Fort Lowell Formation consists of unconsolidated to moderately consolidated sediments, and is generally 300- to 400-feet thick (Murphy and Hedley, 1984).

In the Tucson Sub-basin, depth-to-water (DTW) ranges from 15 feet bg near the confluence of the Tanque Verde Creek and the Pantano Wash, to over 550 feet bg west of the Rincon Mountains. In general, groundwater flow in the Upper Santa Cruz Basin is to the north, northwest, and northeast (Murphy and Hedley, 1984). Between 1953 and 1982, the average decline in groundwater elevation was approximately 60 feet in the vicinity of the subject site, with no apparent associated shifts in regional groundwater flow patterns in the area. Aquifer transmissivity in the vicinity of the subject property ranges from 10,000 to 180,000 gallons per day per foot (Anderson, 1972).

2.2.4 Local Hydrogeology

There are 4 other groundwater wells within 0.5 mile of the subject site. A well inventory is presented in Table 2. Figure 5 illustrates the locations of all the active wells. Seven Notice of Intent (NOI) to abandon records have been filed with the Arizona Department of Water Resources (ADWR) for wells located within a 0.5-mile radius of the subject property. Figure 6 presents the locations of the potentially abandoned wells. Copies of ADWR and Tucson Water driller's logs are included as Appendix F.

Groundwater Elevations, Flow, and Gradient. Groundwater elevations in the area is approximately 2550 feet amsl and flow is Northwest. A Groundwater contour map for the site is shown in **Figure 3**.

Aquifer Characteristics. Tucson Water conducted aquifer tests on each of the monitor wells installed north of the facility at the Vincent Mullins Landfill. Based on testing of the Vincent Mullins wells, Tucson Water reported transmissivities in the vicinity of the subject property of approximately 40,000 gallons per day per foot (gpd/ft). Using 100 feet as the aquifer thickness, a calculated hydraulic conductivity (K) of 400 gallons per day per foot squared is obtained.

Using the K calculated above, the current groundwater gradient, and an aquifer porosity typical of alluvium such as that found beneath the site, a groundwater velocity can be calculated. The formula for calculating groundwater velocity is as follows:

$V = Ki/n$

where: V = Groundwater Velocity (ft/day)

K = Hydraulic Conductivity

$= 400 \text{ gpd/ft}^2 = 53.48 \text{ ft/day}$

i = Average Hydraulic Gradient

$= 0.001$

n = Average Porosity

$= 25\%$

$$V = \frac{(53.48 \text{ ft/day})\ (0.001)}{0.25}$$

$V = 0.21$ ft/day

$$(900 \text{ ft})\left(\frac{\text{day}}{}\right) = 4286 \text{ days or } 11.75 \text{ years}$$
$$(0.21 \text{ ft})$$

Using this velocity, approximately 4,286 days or 11.75 years are required for groundwater to flow from the center of the subject property to the downgradient property boundary. This does not include the time required for potential leachate to migrate an estimated vertical distance of 270 feet to the underlying aquifer.

Groundwater Quality. Since the mid 1980s, groundwater quality in the wells at the Vincent Mullins Landfill, north of the facility site, has been monitored periodically by Tucson Water.

Groundwater sampled from these wells has been analyzed for inorganic and organic compounds. The organic analysis has included U.S. EPA Analytical Methods 601 and 602 for volatile organics, U.S. EPA Analytical Method 502.2, also for volatile organics, and occasionally, U.S. EPA Analytical Method 608 for pesticides and PCBs.

The concentrations of the majority of the inorganic constituents detected in samples collected from the Vincent Mullins monitor wells are below AWQSs. Murphy and Hedley (1984) classified groundwater in the vicinity of the subject property as a calcium-bicarbonate type water. Water in the Tucson Basin is generally very hard with Total Hardness exceeding 50 mg/L. Hardness of groundwater collected from the Vincent Mullins monitor wells ranges from 71 to 112 mg/L. Total Dissolved Solids (TDS) range from 177 mg/L to 290 mg/L. Phosphate and nitrogen were detected in various forms in samples collected from the monitor wells; however, the concentrations of these constituents were below AWQSs. Fluoride was detected in the Vincent Mullins monitor wells in concentrations above the AWQSs. According to Murphy and Hedley (1984), fluoride concentrations in groundwater in all the Sub-basins of the Upper Santa Cruz Basin typically exceed acceptable concentrations (with the exception of the San Rafael Valley and Sonoita Sub-basins, located in the southern portion of the Basin).

None of the concentrations of metals detected in the Vincent Mullins monitor wells have exceeded established AWQS. Three metals; barium, iron, and zinc, were detected in all four Vincent Mullins monitor wells. AWQSs have not been established for iron or zinc. Barium was detected in concentrations that were significantly below AWQSs. In addition to these metals, lead, manganese, and chromium were also detected during various sampling events. The concentrations of lead and chromium did not exceed AWQSs. An AWQS has not been established for manganese.

3.5 Surface Water Hydrology

Location of Surface Water Bodies and 100 Year Discharge

The major surface water bodies within 10 miles of the WRLF include Flato Wash and Franco Wash. Franco Wash is tributary to Santa Cruz River located west of the WRLF site. No portions of the site are located in the 100-year floodplain as defined by the current Flood Insurance Rate Map (FIRM).

3.6 Surface Soils

The Soil Conservation Service (SCS) map classifies site soils as "Mohave and Urban", "Pinaleno-Stagecoach-Palo Verde's Complex", and "Pits and Dumps". The "Mohave and Urban soils on the surface consist of yellowish brown loam underlain by brown sandy loam and clay

loams in the subsurface. Permeability in this soil according to the SCS is "moderately slow" while runoff is "slow". The Pinaleno-Stagecoach-Palos Verde's Complex soils, like the Mohave and Urban soils, are very deep and well drained soils formed in mixed alluvium, but consist of Pinaleno (very cobbly sandy loam), Stagecoach (very gravely sandy loam), and Palos Verde (gravely sandy loam). Permeability in this soil as described by the SCS is "moderately slow" to "moderate", and the runoff is "medium".

3.7 Location Restrictions

This section will evaluate location restrictions for non-MSWLFs are based on siting with respect to certain conditions of floodplains and wetlands, land that is tied to irrigation grandfathered rights, dangers posed by construction or landfill operation to native plant life or to wildlife and their habitats, and geologic hazards posed by seismic zones or conditions that may lead to instability of constructed components of the landfill facility.

3.8 Local Vegetation

Local native vegetation in the site vicinity is characterized by the U.S. Department of Agriculture, Soil Conservation Service (SCS) as the Sonoran Desert Scrub Biotic Community and includes the following native plants: paloverde, triangle bursage, creosote bush, and bush manly. Potential plant community species include the former and cacti, threcawn fluff grass, red grama, rothrock grama desert zinnia, and plains bristlegrass. The Franco Wash, currently flows directly through the site entering form the southeast of the site flowing north and discharging to the adjacent property along the northeastern portion of the landfill. Currently there is open desert rangelands surrounding the site on all sides.

3.9 Land Use and Zoning

This section will describe land use and zoning information for the site and adjacent to the site. Documentation is pending as local approvals are in progress.

4 PROPOSED FACILITY DESIGN AND OPERATION

4.1 Facility Design Description

The WRLF shall be divided into phases, Phase 1, 2, 3, 4, 5, and 6. This APP application includes the following facility design drawings:

- Drawing 1 – Cover Sheet;
- Drawing 2 – Existing Conditions;
- Drawing 3 – Proposed Excavation Plan;
- Drawing 4 – Proposed Final Closure Plan;
- Drawing 5 – Sections and Details; and
- Drawing 6 – Proposed Phase Plan.

The WRLF site encompasses a foot print of approximately 51.5 acres. An area located on the southwest corner of the site has been designated for recycling activities (See **Drawings 3, 4, 5**). Fairfax will sort and salvage as much material as possible from incoming non-MSW waste and divert the remainder to the landfill. The WRLF will also process single-stream recyclable waste and process green waste. Composting activities are also expected and shall be conducted on the inactive areas within the landfill waste limits boundary adjacent to the active fill areas.

The base topographic source was prepared by Rick Engineering Company and the site survey was conducted by Cooper Aerial Surveys Co. (flight date: May 19, 2017). Existing landfill elevations range between 2878.7 feet above mean sea level (amsl) to approximately 2848.2 feet amsl and sloping generally from southeast to northwest though elevations are highly variable due to deep depressions and higher stockpiled areas.

4.2 Landfill Operations

Landfilling operations shall be completed in phases (Phases 1-5) of approximately 10.0 acres in size, See **Drawing 6**. Each phase shall be excavated to an over-all average depth ranging between 84 feet and 102 feet and shall be comprised of two (2) horizontal to one (1) vertical, (2:1), side slopes. A 40 foot wide access road ramp shall be constructed along the northern side slopes at 4.6 percent slope and the floor of the landfill shall be sloped to the southeast as filling operations progress at an average 0.5 percent. The excavation of Phase 1 is expected to begin on the western most section of the landfill area and excavation shall progress to the east. Inactive areas within the waste limits of the landfill shall be used for composing activities.

Construction debris accepted at the WRLF site will consist of generally waste that is structural and functional materials comprised of brick, concrete, and other masonry materials, stone, glass, soil, rock, framing and finishing lumber, roofing materials, plumbing fixtures, electrical appliances and wiring, carpeting, asphaltic substances, metals an green waste materials. The refuge shall be sorted for recycling purposes. Materials that cannot be recycled will be landfilled. Landfilled materials will be placed in lifts of approximately 8-10 feet in thickness with working faces of 3H:1V (horizontal:vertical) or flatter slopes. Daily refuse is generally spread in approximately 2-foot thick layers on a working face approximately 60-feet wide at the same 3:1 working face slope and covered with adequate compacted cover soil or green waste grindings (mulch) produced from the on-site grinding operations. During the fill sequence, lift surfaces (with adequate daily cover) are slightly sloped (to limit erosion) so that surface water is routed to a separate containment area adjacent to the toe of the active face. Areas not tributary to this excavation area are covered with interim cover or final cover and the flows are not confined (i.e., not point sources on the landfill property). As the landfill is developed and to prevent stormwater discharge from active areas of landfilling, two drainage channels as proposed along the north, east and southern boundaries of the site. Additionally, three (3) 100-year, 24-hour retention basis shall be constructed, one (1) storm water containment berm and two (2) storm water drainage channels to control run-on/run-off flows during a 25-year, 2—hour storm event (**Drawing 3**). Proposed on-site facilities may include a truck scale, scale house, maintenance/storage area and water tank.

2.2.5 Proposed Excavation Plan

The excavation plan within the waste limits at the WRLF is to excavate from the west side of the site to an overall average depth of 84 feet along the toe of the northwestern side slope of Phase 1 and 102 feet at the toe of the southeastern side slope of Phase 5 for and over-all average depth of 93-feet (**Drawing 3**). The side slopes of the excavation shall be constructed at a 3H:1V and the floor of the excavation within each Phase shall be graded to drain to the southeast at a minimum 0.5 percent. The subgrade of the excavated Phases shall be moisture conditioned to $\pm$ 3.0 percent of the optimum moisture content (OMC), compacted to a minimum 95 percent of the standard proctor as determined by ASTM D698a and rolled to a smooth finish. Installation of the liner system shall be overseen by a Professional Engineer or his/her representative. Upon completion of the construction within each Phase and prior to placement of any waste materials a written certification report shall be prepared by a Professional Engineer licensed in the State of Arizona.

For a similar landfill facility, the SRLF, an EPA Hydrologic Evaluation of Landfill Performance model, version 3.07, (HELP-3) was used to show that for the landfill liner system utilized at the site, no leachate percolated through the bottom layer of the modeled landfill configuration. The same liner system configuration will be utilized at the WRLF.

2.2.6 Proposed Liner System Plan

The liner system plan shall consist of a finally graded, smooth rolled and compacted sub-grade. A geosynthetic clay liner (GCL) (with a maximum permeability $\leq 1 \times 10^{-5}$ cm/sec shall be place directly over the prepared subgrade. Additionally, there shall be a 24 inch foundation layer placed directly over the GCL for prevent damage from materials and equipment during operations.

2.2.7 Proposed Final Cover System and Grading Plan

The final cover system shall consist of an 18 inch thick layer of cover soil overlain by a 12 inch thick layer of vegetation/erosion soil and shall be graded at a minimum of 1.0 percent slope from southeast to northwest. At the conclusion of the closure activities the top vegetative layer shall be seeded to established grow and to control soil erosion. The landfill cover system shall not exceed the height of the existing ground surrounding waste limits. The maximum elevation at the southeastern corner within the waste limits shall be 2774.0 amsl and 2850.0 amsl at the northwestern corner of the site (**Drawing 4**).

2.2.8 Daily Cover Material Type and Application Rate

Daily cover material shall consist of soil/earthern materials or green waste grindings (mulch) produced from the on-site grinding operations. A daily (and intermediate cover) will consist of a minimum of six (6) inches thick and will be applied at the end of each operating day to control blowing litter.

4.3 Discharge Activities and Controls

Constructed berms around the facility will reduce the potential for unexpected site run-on by utilizing diversion berms to direct into the surrounding natural drainage outside the landfill. On-site run-off will be directed towards a low point within the excavated landfill cell away from the active landfilling area. Upon closure, run-off form the site will be daylighted to match the natural drainage surrounding the site.

4.4 Best Available Demonstrated Control Technology (BADCT)

A BADCT demonstration is required for the proposed facility to be designed in a manner that will not have adverse effects on the uppermost aquifer and that BADCT technology will be applied for groundwater protection and reduction of discharge.

Proposed BADCT for the landfill included an evaluation of site-specific characteristics, including geologic and hydrogeologic information, as well as proposed facility design and operations including stormwater management structures, best management practices, facility excavation, landfill liner system, daily cover, and final cover system.

Excavation and grading of the proposed landfill phases are designed to promote bottom surface drainage to the southeast (in the same direction as the phase advancement) and will include a bottom landfill liner system utilizing placement of a 0.25 inch thick Geosynthetic Clay Liner (GCL) material with a hydraulic conductivity no greater than 5×10^{-9} cm/sec and a 24-inch operations layer consisting of the on-site native soil. The landfill final cover system will consist of an 18-inch infiltration layer with a hydraulic conductivity less than or equal to 1×10^{-4} cm/sec and a 6-inch thick soil erosion layer.

For a similar landfill facility, the SRLF, an EPA Hydrologic Evaluation of Landfill Performance model, version 3.07, (HELP-3) was used to show that for the landfill liner system utilized at the site, no leachate percolated through the bottom layer of the modeled landfill configuration. The

same liner system configuration will be utilized at the WRLF. As such, an evaluation of BADCT for the SRLF is summarized below and should be applicable for the evaluation of the WRLF.

Introduction

The U.S. Environmental Protection Agency (EPA) Hydrologic Evaluation of Landfill Performance Version 3.03 (HELP-3.03) computer simulation model, developed by the U.S. Army Corps. of Engineers Waterways Experiment Station in Vicksburg, Mississippi, was used to evaluate the proposed landfill design. The HELP-3.03 model was performed to include actual cross-sections for both the open and closed configurations. The open configuration for the SRLF was simulated for a total of 30 years. The landfill cross-sections were simulated assuming closed configuration for a total of 30 years to account for the moisture movement through the different layers of the facility during the post-closure care period. The closed configuration of the landfill was simulated from Year 31 through Year 60 using an 18" cap with a saturated hydraulic conductivity value 1 x 10^{-5} cm/sec. Input data files for both the landfills were also created to include the vadose zone beneath the facility in order to estimate leakage into the groundwater. Figures __ through __ show the profiles for the open and closed configurations of the landfill. Results of the model are presented in **Appendix __.**

This section describes the cross-sections for the landfill, the HELP-3.03 Model, discusses the default and user specified parameters selected for evaluation, and summarizes the water balance analysis and results.

Landfill Cross-section

a) Existing Speedway Recycling and Landfill Facility

The landfill cross-section for the existing SRLF was modeled from top to bottom as follows: 6 inches of soil cover, ___ inches of waste layer, 24 inches of operating layer consisting of native soil, and 18 inches of native barrier layer for open configuration. In order to simulate closed configuration, this portion of the facility was modeled from top to bottom as follows: 6 iches of erosion layer, 18 inches of recompacted final cap, 6 inches of intermediate cover, __ inches of waste layer, 24 inches of operation layer, and 18 inches of recompacted barrier layer. This portion of the facility was further simulated for closed configuration to include the vadose zone beneath the landfill bottom. This cross-section included from top to groundwater table the following____

HELP-3.03 Computer Simulation Model

In general, the HELP-3.03 computer program performs a water balance analysis of rainfall, runoff, evaportranspiration, soil moisture storage, lateral drainage, and percolation on a quasi-two-dimensional simulation approach. The HELP-3.03 Model is useful for predicting amounts of runoff, leachate generation, and hydraulic head above the liner system. Careful evaluation of input parameters should be considered to achieve a credible result from the HELP-3.03 program due to complexity of landfill operation and varying hydrological conditions at the site.

Default Parameters

The HELP-3.03 Model requires climatological data, soil vegetative cover type characteristics, runoff curve number, and landfill cross-section with associated geotechnical properties to perform the water balance analysis. The HELP-3.03 Model incorporates a synthetic weather generator which generates daily rainfall and mean daily temperatures, based on the climatological patterns of various weather stations throughout the United States. The synthetic weather generator uses statistical coefficients to generate daily rainfall and mean daily temperature values for a specific station. Default options for vegetative types and default characteristics for soil types are available for use when site-specific estimates are not available. Parameters used in the water balance analysis are discussed below.

Climate: The HELP-3.03 Model contains historical climatological "default" data in its database, which allows the user to select a station close to the site under consideration. The program generates a routine designed to preserve the dependence in time, the correlation between variables, and the seasonal characteristics in actual weather data at the specified location. However, the default data provides climatological information for five years (1974-1978) only. In order to simulate the different cross-sections of the VML and SCDL portions of the facility for both open and closed configurations, the climatological data (solar radiation and temperature) for Tucson, Arizona was generated synthetically for 70 years. The temperature data was also updated by using mean monthly temperature for the year 1993 for Tucson area (NOAA, 1993). As the program can not generate synthetic precipitation data for Tucson, Arizona, precipitation for Phoenix, Arizona was generated to run the model. However, the mean monthly precipitation values for Tucson, Arizona were introduced in the model to adjust the synthetically generated data in order to present a realistic condition.

The normal monthly mean rainfall and temperature data from the specified data is contained in the model results. The is also summarized in Table ___. The mean annual rainfall for the site was calculated to be __ inches. The mean annual temperature was calculated to be __ degrees Fahrenheit. The highest and lowest mean monthly precipitation values were encountered in ___ with __ inches and ___ with __ inches, respectively. The highest and lowest mean monthly temperatures ranged from __ degrees Fahrenheit in ____ and __ degrees Fahrenheit in ____.

Evaporative Zone and Evapotranspiration Data: The HELP-3.03 allows the user to specify SCS runoff curve number, fraction of area allowing runoff, evaporative zone depth, initial snow water, and maximum leaf area index. A value of __ was assigned for SCS curve number. The evaporative zone depth and maximum leaf area index values were selected based on the recommended values for Arizona, specified in HELP User's Guide for Version 3 (1994). These values were 18 inches and 1.00 respectively. Fraction of area allowing runoff was assumed 100 percent, and the total initial snow water was assumed to be 0.00 inches. These values were selected to model the most conservative simulation.

Soil Characteristics: The HELP-3.03 Model allows the user to specify the properties of four different layers: vertical percolation layer, lateral drainage layer, barrier soil layers, or barrier soil layer, and geomembrane liner. The following sections provide a description of each layer used in the HELP-3.03 Model analysis. The properties of each layer utilized to run the model are contained in the results included in **Appendix __.**

Lateral Drainage Layer: The HELP-3.03 Model allows the user to identify surface slopes or slopes within the landfill where lateral drainage may occur to account for runoff. The HELP-3.03 Model does not allow lateral drainage to occur until the lateral drainage layer reaches saturation. Because most of the rainfall in the area is the result of sudden downpours or thunderstorms, and the surface of the closed facility will have __ percent slopes, runoff will occur before the layer becomes saturated. Therefore, the model will underestimate the amount of runoff that occurs and overestimate the amount of percolation reaching the underlying layers; prematurely predicting the formation of leachate.

Vertical Percolation Layers: The vertical percolation layers considered in the model are the erosion layers, inetrmediate soil layers, municipal wastes layer, construction debris and demolition waste layer, and the vadose zone material. The site will accept only the following materials: paper products, concrete, mortar block, landscape rubble, inert construction and demolition debris, vegetation, and untreated wood. The EPA (1983) has provided average moisture content of refuse between 10 to 20 percent by volume and refuse field capacity between 20 to 35 percent by volume. Established guidelines for C&D waste do not exist.

Due to the nature of the disposed material and the desert climate, initial moisture content of the waste is expected to be low. A conservative initial moisture content value of __ percent was used for the waste. As previously discussed, bulk samples were collected from the site and tested. In situ moisture content of the sampled material ranged from 3.3 to 4.8 percent. Because of the dry climate and drainage characteristics of the in situ soils, the moisture content of the underlying vadose zone is estimated to be 4.9 percent. Figures __ through __ show these values. The values are also contained in the model results provided in **Appendix __**.

Barrier Layers: The model classifies a low-permeability layer as a barrier layer. A low-permeability layer restricts vertical flow of moisture through the final soil profile into the underlying wastes, and from the waste to the existing subgrade. The model was simulated assuming 2 feet of vertical percolation layer with a saturated hydraulic conductivity value of 1×10^{-4} cm/sec. This value was selected because the results of laboratory testing indicate that remolded permeability of on-site soils range from 2.99×10^{-4} cm/sec to 2.43×10^{-6} cm/sec. The 18-inch compacted on-site soil barrier liners located in the final cover and at the basement grades were modeled using a permeability of 1×10^{-5} cm/sec. The initial moisture content of the barrier layers is equal to the optimum moisture content of the material, based on the laboratory testing. The HELP-3.03 Model does not allow evaporative losses from the barrier layers, thus underestimating the actual amount of evaporative losses above the barrier layers. The model also overestimates the percolation through the low-permeability layer of the final cover and therefore tends to predict formation of leachate prematurely.

2.2.9 Model Results

The HELP-3.03 Model output results for the closed landfill configuration are presented in **Appendix __**. As stated in Section 3.2, the relatively low hydraulic conductivities of the vadose zone material and the depth to the aquifer beneath the site are characteristics included in BADCT. The results of the model are discussed below.

a) Open Configuration - Speedway Construction Debris Landfill

b) Closed Configuration - Speedway Construction Debris Landfill

Summary Results

A summary of the results obtained from HELP-3.03 Model output is presented below to provide a quantitative analysis for the percolation through the SRLF:

Landfill Configuration	Simulation Time	Average Annual Percolation through Landfill Bottom
Open Configuration - SRLF		
Closed Configuration - SRLF		

Base and Side Slope Liner System

The purpose of the base liner system is to restrict potential leachate seepage into the underlying groundwater aquifer. Results from the HELP-3.03 Model evaluation indicate that no potential leachate will percolate through either of the landfills bottom during the open configuration. Similarly, no leachate percolation through the landfill bottom is expected during the 30-year post-closure period.

As discussed in the previous section, the modeling is conservative and will predict leachate generation prematurely. The relatively low conductivity of the vadose zone materials would hinder downward migration of leachate and provide further support to the BADCT design.

Final Cover System

The proposed final cover system will minimize infiltration of water into the landfill, therefore reducing the potential for leachate production. The purpose of the drainage layer will be to convey water which may percolate through the recompacted barrier layer to the perimeter of the landfill. This will minimize the potential head on the surface of the barrier layer.

4.5 Augmentation of BADCT

Section VII of the Arizona BADCT Guidance Documentation and Arizona Administrative Code (AAC) R18-9-108.B.5 requires applicants to submit feasibility studies showing that they have evaluated the following alternatives to landfill waste disposal:

- Cogeneration and Incineration
- Separation of Wastes
- Recycling

The BADCT Guidance Document does not provide definitions of those terms (ADEQ, 1990). Therefore, the following conventional definitions were used for these studies:

Cogeneration - this process involves the combustion (incineration) of refuse in boilers, with energy being recovered by the simultaneous generation of electrical power and heat for industrial heating use.

Incineration - this is a controlled process by which wastes are burned and changed into gases and the residue produced contains little or no combustible material.

Separation of wastes - this process involves the systematic division of wastes into designated categories for subsequent resource recovery through recycling, composting, or reuse.

Recycling - this process includes the collection, reprocessing, or remanufacturing and reuse of a waste commodity to produce new products.

The technical and economic feasibility of each alternative is discussed in the following sections.

Cogeneration and Incineration

Incineration involves burning waste while controlling all factors of combustion-temperature, retention time, turbulence, and air flow. In the cogeneration process, energy and heat are simultaneously produced from the combustion process. Typically, the energy produced by a cogeneration facility is sold to a utility, and the heat is provided to industrial users who must be located nearby.

The combustion process (including both incineration and cogeneration) has the advantage of reducing the volume of waste that would require landfilling. However, a major disadvantage of any project that includes the burning of refuse is that it usually meets with intense public opposition, due to the potential generation of air emissions and related air quality and health risk concerns. The capital costs for these types of facilities are between $80,000 and $150,000 per ton of daily capacity, which is substantially higher than land disposal costs (California Waste Management Board, 1989). The selling price of energy generated can fluctuate widely, and it is often difficult to obtain financing for these types of projects. Incineration and cogeneration are not considered feasible alternatives to this project because large portions of the accepted waste stream are non-combustible.

Separation of Wastes

Waste separation is an integral part of recycling. It divides the waste stream into various categories, some of which may be suited for subsequent recycling. By itself, however, waste separation does not result in the diversion of waste from landfilling. The separated wastes must be processed or remanufactured into new products that are reused, for true diversion to be accomplished.

Waste separation can take place at the source (e.g., source-separated collection at the curbside), and/or at a centralized facility such as a materials recovery facility (MRF). Source separation programs can be either multiple container (e.g., a separate container for each commodity being collected), or single container (all recyclables are commingled in a container separate from non-recyclable refuse). Additional processing may be required at a MRF in order to prepare the materials for market.

Most MRFs in the United States process source-separated waste at an operating cost of approximately $30 to $60 per ton (California Waste Management Board, 1989). Capital costs for MRFs are typically between $20,000 to $36,000 per ton of daily capacity. For efficient operation, these MRFs are dependent upon the waste and recyclable collection system to deliver recyclables that are relatively uncontaminated with refuse. The residuals (non-recyclables) from a MRF operation still require landfilling. MRF operations have been estimated to recover between 20 to 30 percent of the waste stream. The ability to recycle all of these recovered materials is highly dependent upon the fluctuating recyclables market.

Recycling

The recycling process includes four elements: separation, collection, processing, and marketing. Each of these elements must be in place before true recycling can occur. Current estimates indicate that recycling efforts may be able to divert between 30 to 60 percent of the municipal waste stream.

4.6 Economic Evaluation and Selection of BADCT Design

Liner System. The proposed liner system does not offer equivalent performance as compared to the BADCT optimal design. From an economic viewpoint, the optimal BADCT liner system (double flexible membrane with primary and secondary leachate collection system) would not be a cost-effective alternative in relation to the value of the existing waste stream accepted by the facility.

The proposed liner system is justified because it constitutes current state-of-practice for C&D landfills throughout the United States.

Stormwater Runoff. The proposed operational procedures and final cover design achieve the BADCT objectives of preventing contamination of runoff through prevention of contact with wastes. Current industry-wide practice does not dictate total containment of the 100-year, 24-hour duration storm runoff volume for effective sediment control. Therefore, the additional cost associated with optimal BADCT design of providing total containment of all runoff associated with the 100-year, 24-hour storm event is not economically warranted when considered on an industry-wide basis.

Closure Design. The optimal final closure design would be more expensive than the proposed final closure design. The amount of infiltration that may be expected to occur with the proposed design can be largely absorbed in the landfilled waste and has been considered in HELP modeling. The proposed final cap design is justified from a technical, regulatory, and economic standpoint.

Operational Practices. The operational practices required by ADEQ for BADCT and discussed above are considered feasible and involve normal costs of operation, with the exception of identifying and recording the identity of all generators of municipal wastes. Municipal wastes are not accepted at the facility.

BADCT Selection. The BADCT evaluation presented indicates that the proposed control technology achieves adequate reduction of possible discharges from the site.

The proposed design does not offer equivalent discharge reduction to the optimal BADCT design; however, site characteristics elevate the performance of the selected design by providing further discharge reduction through limitation of downward percolation. The absence of municipal solid waste from the landfill further limits the potential for leachate discharge and reduces the environmental impact of any leachate that is produced. In the event that a release of leachate did occur from the landfill, site attributes would hinder the vertical migration of leachate toward the regional aquifer. Therefore, regional groundwater quality is protected by both the recompacted base and the characteristics of native soils underlying the site.

5 DEMONSTRATION OF COMPLIANCE WITH STANDARDS

The APP program requires that the permit applicant provide a demonstration that the facility will not cause or contribute to a violation of the AWQLs at the applicable point(s) of compliance. Where the AWQLs are already exceeded in a particular aquifer, the permit applicant will provide a demonstration that no additional degradation will occur. Demonstration of compliance with standards for the WRLF includes:

- A landfill liner system that includes GCL combined with an operations layer, daily and intermediate cover, drainage measures to control run-on as well as run-off drained away from the closed landfill towards the outside perimeter of the landfill, and a low permeability final cover system; and

- Establishment of a POC for the Discharge Impact Area (DIA).

5.1 Assessment of the Discharge Impact Area (DIA)

Based on the BADCT evaluation and consideration of precipitation and evaporation rates, no significant discharge is expected from the proposed facility. For purposes of satisfying requirements of the APP program, the DIA has been defined and is shown on Figure __.

5.2 Points of Compliance (POC)

The site has an existing groundwater well in the northwest portion of the property. As the direction of groundwater flow is generally northwest through the site, this well is proposed as a point of compliance (POC). As the landfilling progresses from west to east, a second POC well will be installed along the northern boundary of the facility. The existing and the future second groundwater wells have been delineated in the attached **Figure 4**.

5.3 Groundwater Monitoring Plan

Ambient Groundwater Monitoring

Ambient groundwater samples will be collected from the existing groundwater well prior to start of the landfill operations. The results will be considered as part of the ambient groundwater monitoring program. Fairfax plans to collect at least 4 rounds of ambient groundwater samples to assess groundwater conditions. The samples will be analyzed by a state-approved analytical laboratory for common inorganics and heavy metals. As this landfill would be strictly for the disposal of C&D, the need for characterization of the groundwater for organic compounds would not be warranted. These results will be submitted under a Compliance Schedule depending on the start of the landfilling operations.

Routine Groundwater Monitoring

Fairfax plans to collect samples from the existing groundwater well to be characterized on an annual basis for common inorganics and heavy metals. As the landfill progress towards Phase 3, groundwater flow conditions and point of compliances shall be reassessed, and Fairfax will install a groundwater monitoring well at a designated point of compliance (POC).

5.4 Evaluation of Compliance at the POC

Alert Levels (ALs) have been proposed and are discussed in Section _. AMTECH is proposing to reserve the establishment of ALs for the proposed facility pending an initial groundwater study from nearby groundwater wells.

If water detected in the LDS sump exceed the AL for any of the parameters in Table 2, then water samples will be collected in accordance with appropriate methods. Analytical results will then be compared to the AWQS established in the permit to assess compliance.

Data validation will be conducted on all field and laboratory data. Field data will be examined for completeness, accuracy, and adherence to standard operating procedures. Comparisons of field instrument results to laboratory results will also be made. Laboratory guidelines will be validated following U.S. Environmental Protection Agency (EPA) guidelines. Results will be evaluated to determine compliance with data quality objectives.

5.5 Contingency Plan

This section will outline the potential contingency situations that may occur at the facility and identifies which actions may be taken. For all the circumstances discussed, the facility management will be notified immediately. In addition, the appropriate governmental agencies and/or businesses will also be identified. All steps to be taken are designed to protect public health and safety and the environment. Telephone service will be provided at the facility.

Fairfax will conduct operations at the facility to preclude, to every extent possible, the potential for emergency situations or occurrences. However, it is possible for events to occur which are beyond the control of facility personnel.

5.6 Other Operational Information

This section will provide other operational information, including details regarding hazard and nuisance controls, public access controls, and on-site records maintenance.

6 REFERENCES

1. This section is reserved for a listing of References.