ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA) FOR ANDALUSIA NEW MAADI HOSPITAL PROJECT

FINAL REPORT

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QUALITY CONTROL

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تمهيد

يواجه نظام الرعاية الصحية في مصر العديد من العقبات أمام تحسين صحة المصريين وعافيتهم. فالعقبات التي يواجهها النظام لا تنحصر فقط في الأمراض المرتبطة بالفقر وقلة التعليم، وإنما عليه أيضًا أن يتعامل مع الأمراض والعلل الناشئة المرتبطة بأساليب الحياة الحضرية الحديثة. وتتزايد مطالب السكان بعلاج أفضل وأكثر توفرًا، بالإضافة إلى تقنيات الرعاية الصحية المتقدمة، مع إتاحة الاتصالات والتجارة العالمية بصورة أكبر.

فضلًا عن أن العبء الديموغرافي على النظام الصحي في مصر في تزايد نتيجة لارتفاع معدل المواليد وزيادة متوسط عمر الفرد. فثمة 100 مليون مصري يعيشون داخل البلاد و10 ملايين يعيشون بالخارج، وبذلك تُعد مصر من أكبر البلدان العربية من حيث كثافة السكان. ونظرًا لأن معدل النمو السكاني يساوي 2.5 في المائة سنويًا، هناك حاجة متزايدة إلى توفر بنية تحتية اجتماعية ومادية، مثل الرعاية الصحية والتعليم. وسيُقاس نجاح قطاع الرعاية الصحية في مصر على المدى الطويل بمدى سرعة قبوله التقنيات والابتكارات الحديثة المبنية على الأبحاث والتطورات العالمية واعتماده نهجًا مبنيًا على البيانات محوره المريض وموجهًا نحو تحقيق نتائج فعلية.

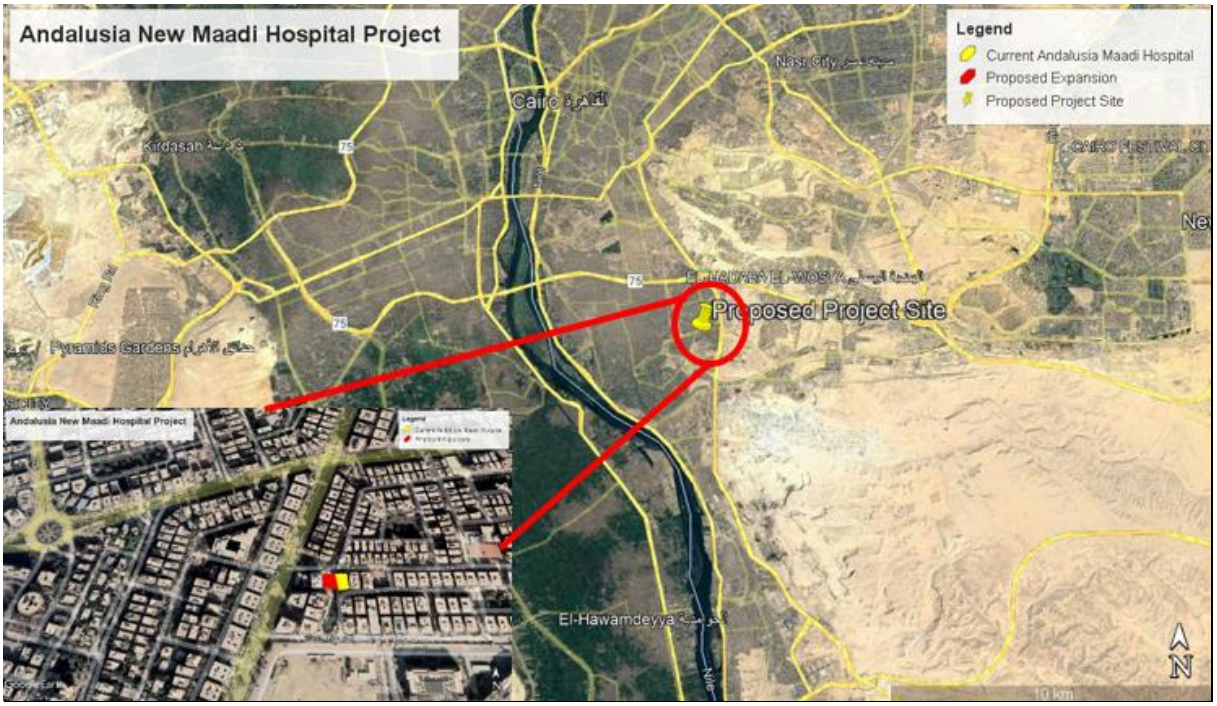
ومن المقدر أنه بحلول عام 2030، ستحتاج مصر إلى ما يقرب من 38000 سرير جديد (بناءً على معدل الأسرة لكل مواطن في مصر وقدره 1.3 سرير/1000 نسمة) باستثمارات تُقدَّر بين 8 مليارات و13 مليار دولار أمريكي، وما يصل إلى 120000 سرير جديد (بناءً على المعدل في منطقة الشرق الأوسط وشمال إفريقيا الذي يبلغ 1.9 سرير/1000 نسمة) باستثمارات تُقدَّر بين 25 و40 مليار دولار، ونصف هذه الاستثمارات ممول من القطاع الخاص. وتم حساب حجم الاستثمارات اللازمة لسد هذه الفجوة على أساس التكلفة الحالية للبناء بالتجهيزات اللازمة لمستشفى من الفئة أ، التي تتراوح بين 1500 دولار أمريكي/متر مربع و2000 دولار أمريكي/متر مربع (بمتوسط 1750 دولار أمريكي/متر مربع)، بينما تتراوح المساحة الإجمالية لكل سرير بين 90 متر مربع و120 متر مربع (بمتوسط 115 متر مربع)، بالإضافة إلى الاستثمارات في التجهيزات الطبية التي تتراوح قيمتها بين 80000 دولار أمريكي و100000 دولار أمريكي لكل سرير. وعلاوة على ذلك، نظرًا لأن "عيادات الأطباء" تُعد من أكثر الخدمات رواجًا في مصر، من المُقدَّر أن الدولة ستحتاج إلى مليوني متر مربع تقريبًا من مساحة العيادات بحلول عام 2030، بتكلفة مليار دولار أمريكي، وسيتيح ذلك الفرصة لشركات البناء لإنشاء عيادات وبيعها للأطباء/المستثمرين[1].

ثمة فجوة واضحة في قطاع الرعاية الصحية في مصر، وسيساهم المشروع في سد هذه الفجوة. سيقدم المشروع أحدث التقنيات والخبرات ليوفر للمجتمع رعاية صحية وخدمات طبية من الطراز العالمي. ولن توفر المستشفى الرعاية للمرضى الداخليين فحسب، بل ستتضمن أيضًا عيادات خارجية، وبذلك ستعوض كلا النواقص التي أبرزها تقرير Colliers.

يدرس البنك الإفريقي للتنمية (AfDB) تقديم قرض استثماري لدعم تعزيز قطاع الرعاية الصحية في مصر من خلال دعم مجموعة أندلسية (سيُشار إليها لاحقًا بـ "منشئ المشروع"، "أندلسية") لإنشاء مستشفى من الطراز الأول بمنطقة المعادي في محافظة القاهرة، مصر (سيُشار إليه لاحقًا بـ "المشروع"). موقع المشروع موضح في الشكل أدناه.

[1] المعلومات المطروحة في الفصل مأخوذة من Colliers Egypt Healthcare Overview: Research and Forecast Report 2021/2022, accessed at: https://www.colliers.com/en-eg/research/cairo/egypt-healthcare-overview

شكل 10-: الموقع المقترح للمشروع



عملية تقييم الأثر البيئي والاجتماعي

إن القانون رقم 1994/4 وتعديلاته ولوائحه التنفيذية، الذي يُعرف أيضًا باسم قانون حماية البيئة، يتطلب إجراء تقييمات للأثر البيئي والاجتماعي (تقييم الأثر البيئي و الاجتماعي) للمشروعات والتوسعات الجديدة بالإضافة إلى تجديدات المشروعات القائمة بالفعل.

يصنف هذا القانون المشروعات لثلاث فئات بناءً على مستويات مختلفة من متطلبات تقييم الأثر البيئي (EIA) وذلك حسب شدة التأثيرات البيئية المحتملة وموقع الإنشاءات وقربها من التجمعات السكنية:

- الفئة (أ): المشروعات ذات الحد الأدنى من الآثار البيئية. يتطلب من هذه المشروعات إكمال نموذج تقييم الأثر البيئي أ؛
- الفئة (ب): المشروعات التي من المحتمل أن يكون لها تأثيرات بيئية ضارة ولكن ضررها أقل من الفئة ج. يتطلب من هذه المشروعات إكمال نموذج تقييم الأثر البيئي ب؛
- الفئة (ج): المشروعات ذات الآثار البيئية عالية الضرر، وهي ملزمة بإجراء دراسة كاملة ومفصلة لتقييم الأثر البيئي.

وفقًا للقانون رقم 4 لعام 1994 يعتبر المشروع مصنفًا ضمن الفئة ب من المشروعات. ووفقًا لدليل أسس وإجراءات تقييم الأثر البيئي (الإصدار الثاني - يناير 2009) الصادر عن جهاز شؤون البيئة المصري، فإن تقييم الأثر البيئي لمشروع من الفئة ب ينبغي أن يتضمن المعلومات التالية:

- تحديد أسماء معدي النموذج
- وصف المشروع
- القوانين واللوائح
- وصف البيئة المحيطة (المادية، البيولوجية، الاجتماعية)
- تقييم الآثار
- تحليل البدائل
- خطة الإدارة البيئية (EMP)

يوجد شرح لعملية الموافقة في الفصل 2.1.

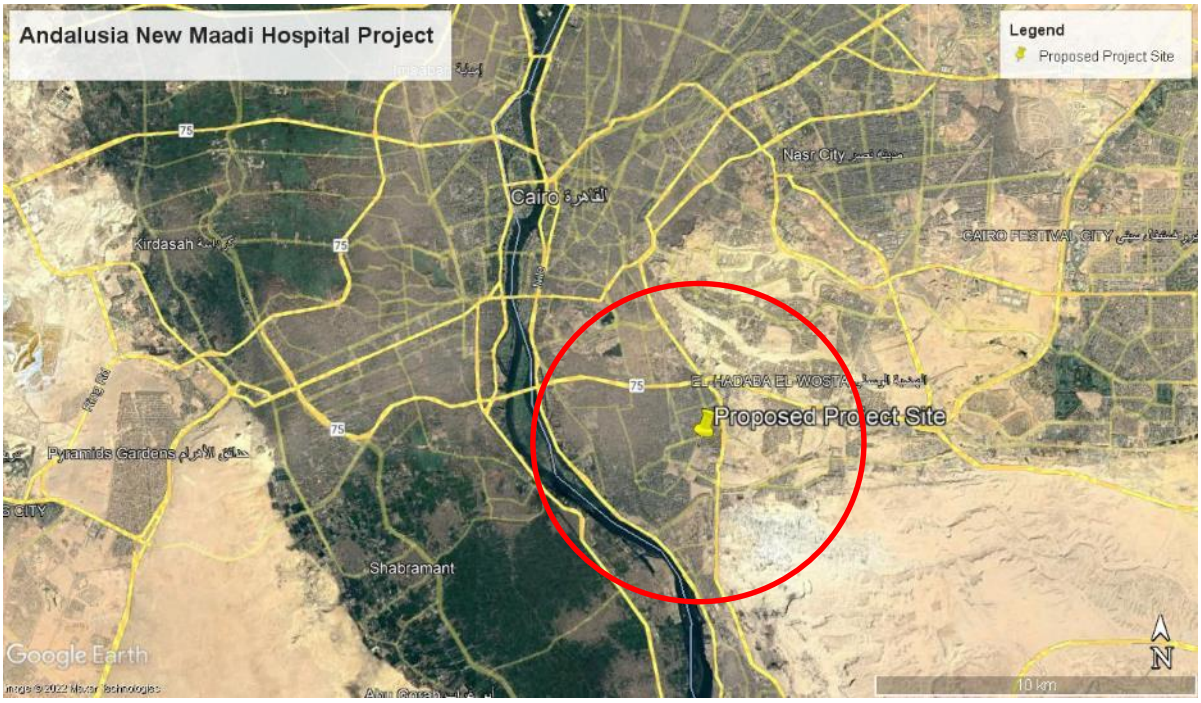
يتطلب الضمان التشغيلي (OS) رقم 1 "التقييم البيئي والاجتماعي" الخاص بالبنك الإفريقي للتنمية أن تجري جميع المشروعات التي يمولها البنك تقييمًا للأثر البيئي والاجتماعي لتحديد فئة المشروع بيئيًا واجتماعيًا وتحديد متطلبات التقييم البيئي والاجتماعي الناتجة عنه. وفقًا للضمان التشغيلي رقم 1 الخاص بالبنك الإفريقي للتنمية، يعتبر المشروع مصنفًا ضمن الفئة 2، وهو ما يعرف بأنه مشروع "من المرجح أن يكون له تأثيرات بيئية و/أو اجتماعية ضارة مرتبطة بالموقع

ولكنها أقل ضررًا من تأثيرات مشروعات الفئة 1". تتطلب مشروعات الفئة 2 أيضًا إعداد خطة إدارة بيئية واجتماعية (ESMP)، وسيتم إعدادها في وثيقة منفصلة عن تقييم الأثر البيئي والاجتماعي (ESIA) (يُرجى الاطلاع على الفصل 5 أدناه).

نظرة عامة على المشروع

يقع هذا المشروع في منطقة المعادي بالقاهرة، مصر بالإحداثيات التالية: 29° 58' 24.3" شمالًا و31° 16' 53.6" شرقًا. ومن المتوقع أن تبدأ مرحلة الإنشاء للمشروع في أغسطس 2022 وتستمر لمدة 10 شهور. من المحدد أن يبدأ تشغيل المشروع في 2024. موقع المشروع موضح في Figure 5-1.

شكل 20-: موقع المشروع (مأخوذ من Google Earth في 12 مايو 2022)



الإطار القانوني والمؤسسي

الإطار القانوني والمؤسسي للعمل البيئي بمصر

إن القانون رقم 1994/4 وتعديلاته ولوائحه التنفيذية، الذي يُعرف أيضًا باسم قانون حماية البيئة، يتطلب إجراء تقييمات للأثر البيئي والاجتماعي (تقييم الأثر البيئي و الاجتماعي) للمشروعات والتوسعات الجديدة بالإضافة إلى تجديدات المشروعات القائمة بالفعل. الجهات الإدارية المختصة بتقييم الأثر البيئي (EIA) في مصر هي الوزارات والمحافظات (في هذه الحالة وزارة الصحة والسكان)، نظرًا لأنها لديها الصلاحية التنفيذية المتعلقة بتراخيص التنمية. طبقاً للقانون رقم 4 فإن الجهة الإدارية المختصة مطالبة بفحص المشروعات، بينما تتولي الإدارة المركزية لتقييم الأثر البيئي بجهاز شئون البيئة مسئولية الإشراف على عملية الفحص، وإدارة مراجعة تقارير تقييم الأثر البيئي والاجتماعي، واتخاذ القرارات الخاصة بقبول تقارير تقييم الأثر البيئي، وإبداء الرأي فيما يتعلق بوضع مقترحات خاصة بإجراءات التخفيف.

وفيما يلي وصف موجز لمختلف الجهات والمؤسسات الوطنية ذات الصلة بهذا المشروع (جهاز شئون البيئة، وحدة إدارة البيئة على مستوى المحافظات والمحليات، الجهات الإدارية المختصة).

جهاز شئون البيئة المصري هو جهة حكومية معتمدة لتنظم قضايا الإدارة البيئية. وسن القوانين البيئية. تحدد القوانين المصرية ثلاثة أدوار رئيسية لجهاز شئون البيئة وهي على النحو التالي:

- دور تنظيمي وتنسيقي في معظم الأنشطة، فضلًا عن دور تنفيذي يقتصر على إدارة المحميات الطبيعية والمشاريع الرائدة.
- الجهاز مسؤول عن صياغة إطار سياسة الإدارة البيئية، ووضع خطط العمل المطلوبة لحماية البيئة. متابعة تنفيذها بالتنسيق مع الهيئة الإدارية المختصة؛ جهاز شئون البيئة هو المسؤول عن مراجعة واعتماد دراسات تقييم الأثر البيئي والاجتماعي.
- تفرض رسوما إدارية لمراجعة دراسة تقييم الأثر البيئي والاجتماعي وإصدار التصاريح البيئية.

وتتولى وحدة الإدارة البيئية على مستوى المحافظات والمقاطعات مسؤولية الأداء البيئي لجميع المشاريع/المرافق داخل مباني المحافظة. وتقوم المحافظة عادة بإنشاء وحدات للإدارة البيئية على مستوى المحافظة والمدينة/المنطقة. وتتولى الوحدة مسؤولية حماية البيئة داخل حدود المحافظة، ومن ثم فهي مكلفة بالاضطلاع بأنشطة التخطيط البيئي والأنشطة المختصة بالتشغيل. ووحدة الإدارة البيئية مكلفة بما يلي:

- متابعة الأداء البيئي للمشروعات داخل المحافظة خلال مراحل الأنشاء والتشغيل للتأكد من التزام المشروع بالقوانين واللوائح وكذلك إجراءات التخفيف المدرجة في الموافقة البيئية (تقييم الأثر البيئي). التحقيق في أي شكوى بيئية تقدم ضد مشروع داخل نطاق المحافظة
- تتبع وحدة إدارة البيئة إداريا المحافظة، أما الناحية الفنية فتتبع لجهاز شئون البيئة. وتقدم وحدات إدارة البيئة تقارير شهرية إلى جهاز شئون البيئة عن إنجازاتها ونتائج التفتيش البيئي
- لدى المحافظة وحدة لإدارة المخلفات الصلبة على مستوى المحافظات والمحليات. الوحدات مسؤولة عن الإشراف على عقود إدارة المخلفات الصلبة.

الجهة الإدارية المختصة للمنشآت الطبية هي وزارة الصحة والسكان. وينص القانون 4 لسنة 1994 على أن طلب الحصول على ترخيص من قبل أفراد أو شركة أو منظمة أو هيئة تخضع لشروط محددة، وتشترط إعداد تقييم للتأثيرات البيئية المتوقعة.

الجهة الإدارية المختصة هي الجهات المسئولة عن إصدار التراخيص اللازمة لإنشاء وتشغيل المشروع. ويعد تقييم الأثر البيئي والاجتماعي للمشروعات أحد اشتراطات الحصول على ترخيص. تتولى الجهة الإدارية المختصة مسئولية استلام دراسات تقييم الأثر البيئي والاجتماعي والتأكد من المعلومات المتضمنة في هذه الدراسات المتعلقة بالموقع، ومدى ملائمته لنشاط المشروع والتأكد من أن هذا النشاط لا يتعارض مع الأنشطة المحيطة، وأن الموقع لا يتعارض مع القرارات الوزارية ذات الصلة بهذا النشاط. ترسل الجهات الإدارية المختصة المستندات إلى جهاز شئون البيئة للمراجعة. وتعد الجهات الإدارية المختصة الواجهة الرئيسية للتعامل مع مقدمي المشروع في نظام تقييم الأثر البيئي والاجتماعي. مهام الجهة الإدارية المختصة ما يلي:

- تقديم المساعدة الفنية لأصحاب المشروع مثل طرح قوائم دراسات تقييم الأثر البيئي و الاجتماعي التوضيحية لتحديد فئة المشروع، والتشاور مع جهاز شئون البيئة في حالة عدم إدراج المشروع في القوائم الإرشادية الخاصة بـ دراسات تقييم الأثر البيئي و الاجتماعي، باستخدام المعايير الموضحة في القسم 5 من إرشادات تقييم الأثر البيئي لتحديد فئة المشروع. وسيكون لدى الجهاز القرار النهائي بشأن التصنيف، وينبغي أن تبلغ مقدم المشروع بآرائها كتابة. كما تقدم الهيئة الإدارية المختصة لواضعي المشروع نماذج دراسات تقييم الأثر البيئي والاجتماعي للفئة أ أو ب، ويقدم المشورة لمقدم المشروع فيما يتعلق بمتطلبات النموذج، بالإضافة إلى الرد على أي أسئلة يطرحها أصحاب المشروع؛
- التأكد من الموافقة على الموقع المقترح للمشروع؛
- استلام دراسة تقييم الأثر البيئي والاجتماعي وإرسالها إلى جهاز شئون البيئة؛
- متابعة تنفيذ خطة الإدارة البيئية والاجتماعية داخل دراسة تقييم الأثر البيئي و الاجتماعي أثناء البناء (قبل إصدار ترخيص التشغيل) والتنفيذ.

بعد تقديم دراسة تقييم الأثر البيئي والاجتماعي للمراجعة، قد يطلب جهاز شئون البيئة تعديلات في تقرير تقييم الأثر البيئي والاجتماعي خلال 30 يومًا، بما في ذلك تدابير التخفيف الإضافية، قبل إصدار الموافقة على التقرير. ويحق لمقدم المشروع أن يصدر استئنافا في غضون 30 يومًا من تلقيه قرار الجهاز. وتجدر الإشارة إلى أنه بمجرد الموافقة على تقييم الأثر البيئي والاجتماعي، ستعتبر خطة الإدارة البيئية والاجتماعية كما سيتم عرضها في التقرير جزءا لا يتجزأ من المشروع؛ وستكون الشركة المسئولة عن المشروع مسؤولة قانونا عن تنفيذ تلك الخطة، وفقاً للمخطط له خلال مرحلة الإنشاء و/أو التشغيل. ومن ثم، تتوجب الإشارة إلى أنه يجب على مقدم المشروع أن يكفل الإشارة بوضوح في وثائق المناقصة المتعلقة بأعمال البناء وعقود البناء إلى جميع تدابير التخفيف والمتطلبات البيئية المقررة في خطة الإدارة البيئية. إن مقدم المشروع مسؤول عن ضمان تنفيذ المقاولين لبرنامج الإدارة البيئية خلال مرحلتي الإنشاء (أو الهدم والتجديد) والتشغيل.
Figure 3-1 أدناه عملية تقديم دراسة تقييم الأثر البيئي والاجتماعي.

الإطار القانوني لظروف العمل والعمالة في مصر
يتألف الإطار القانوني للعمالة في مصر من مجموعة واسعة من القوانين والقرارات التي تحمي وتضمن حقوق العاملين وتشمل المواد التالية من قانون العمل المصري 2003/12، والتي ستذكر تفاصيلها في تقرير تقييم الأثر البيئي والاجتماعي:

- المادة 34 من القانون 2003/12
- المادة 54 من القانون 2003/12
- المادة 85 من القانون 2003/12
- المادة 120 من القانون 2003/12

حماية الأطفال مكفولة بالقانون 1996/12.

الإطار القانوني للصحة والسلامة المهنية (OHS) في مصر
يتم تنظيم الصحة والسلامة المهنية في مصر في إطار القانون 2003/12. وقد صدرت نسخته المنقحة ونشرت في الجريدة الرسمية رقم 14 (مكرر) بتاريخ 7 إبريل 2003، ودخل حيز التنفيذ بتاريخ 7 يوليو 2003.

الإطار القانوني لإدارة الحركة المرورية في مصر
قانون المرور 1973/66 المعدل بالقانون 2008/121 الذي يتناول تخطيط حركة المرور أثناء إنشاء المشروعات.

الضمانات التشغيلية للبنك الإفريقي للتنمية

لدى البنك الإفريقي للتنمية خمسة ضمانات تشغيلية تشكل نظام الضمانات المتكامل الخاص به.

الضمان التشغيلي للبنك الإفريقي للتنمية	الأهداف	ينطبق على المشروع (نعم/لا)
الضمان التشغيلي 1 – التقييم البيئي والاجتماعي	• الترويج للمسائل المتعلقة بالبيئة والتغير المناخي والمجتمع في صحائف استراتيجيات الدولة (CSPs) وصحائف استراتيجيات التكامل الإقليمي (RISPs)؛ • وتحديد وتقييم التأثيرات والمخاطر البيئية والاجتماعية، بما في ذلك تلك المتعلقة بالنوع الجنسي والتغير المناخي وقابلية التأثر، الناجمة عن عمليات الإقراض والتمويل بالمنح التي يجريها البنك في مجالات تأثيره؛ • وتجنب وقوع آثار ضارة على البيئة والمجتمعات المتأثرة، أو -إذا لم يكن التجنب ممكنًا- تقليلها وتخفيفها والتعويض عنها؛ • وتيسير مشاركة أصحاب المصلحة أثناء عملية المشاورة لكي تتمكن المجتمعات المتأثرة إلى جانب أصحاب المصلحة من الوصول إلى المعلومات المتعلقة بأعمال البنك في الوقت المناسب بطرق ملائمة، ولكي تتم استشارتهم بشكل هادف بشأن المسائل التي قد تؤثر عليهم؛ • وضمان الإدارة الفعالة للمخاطر البيئية والاجتماعية في المشروعات أثناء تنفيذها وبعده؛ • والمساهمة في تقوية أنظمة البلدان الإقليمية الأعضاء (RMC) فيما يتعلق بإدارة المخاطر البيئية والاجتماعية وذلك من خلال تقييم وبناء قدرتها على استيفاء متطلبات البنك الإفريقي للتنمية الموضحة في نظام الضمانات المتكامل (ISS)	**ينطبق** • المشروع من الفئة 2 ويتطلب إكمال تقييم للأثر البيئي والاجتماعي وإعداد خطة إدارة بيئية واجتماعية
الضمان التشغيلي 2 - إعادة التوطين القسري: الاستحواذ على الأرض، نزوح السكان وتعويضهم	• تجنب إعادة التوطين القسري عند الإمكان، أو تقليل تأثيرات إعادة التوطين عندما يعتبر تجنب إعادة التوطين غير ممكن بعد استكشاف جميع تصميمات المشروع البديلة؛ • والتأكد من أنه قد تم التشاور مع السكان النازحين بشكل هادف وقد أتيحت لهم الفرص للمشاركة في تخطيط وتنفيذ برامج إعادة التوطين؛ • وضمان حصول السكان النازحين على مساعدة كافية لإعادة التوطين في ظل المشروع، لكي تتحسن مستويات معيشتهم وقدرتهم على كسب العيش ومستويات الإنتاج لديهم ووسائل معيشتهم بشكل عام وتصبح أفضل مما كانت عليه قبل المشروع؛ • وتقديم الإرشاد الواضح للمقترضين بشأن الشروط الواجب استيفائها فيما يتعلق بمسائل إعادة التوطين الناشئة عن أعمال البنك وذلك لتخفيف التأثيرات الضارة للنزوح وإعادة التوطين، وتسهيل التطوير المجتمعي بشكل فعال، والحفاظ على استدامة الاقتصاد والمجتمع؛ • وتجنب سوء إعداد وتنفيذ خطط إعادة التوطين من خلال وضع آلية لمراقبة أداء برامج إعادة التوطين القسري التابعة لأعمال البنك وتصحيح المشكلات فور ظهورها.	**لا ينطبق** • لن ينتج عن المشروع فقدان للأراضي أو إعادة توطين للسكان أو الاستحواذ على الأراضي. تقع مؤسسات البنية التحتية للمشروع في أراض خالية اشترتها مجموعة أندلسية بصورة قانونية.
الضمان التشغيلي 3 - خدمات التنوع الحيوي والموارد المتجددة والنظام البيئي	• الحفاظ على التنوع البيولوجي وسلامة النظام البيئي عن طريق تجنب أو تقليل التأثيرات الضارة على التنوع الحيوي والحد منها إذا لم يكن تجنبها ممكنًا؛ • والسعي لإصلاح التنوع الحيوي أو استعادته، بما في ذلك، من خلال إجراء تعويضات للتنوع الحيوي لتحقيق "مكسب كلي بدلًا من خسارة كلية" للتنوع الحيوي، وذلك مع بعض التأثيرات التي لا يمكن تجنبها؛ • وحماية الموائل الطبيعية والمعدلة والحيوية؛ • والحفاظ على توفر وإنتاجية خدمات النظام البيئي ذات الأولوية لاستمرار انتفاع المجتمعات المتأثرة واستدامة أداء المشروع.	**لا ينطبق** • لا يقع المشروع في أي مناطق حساسة من حيث التنوع الحيوي. لا تتطلب طبيعة المشروع استخدام الموارد الطبيعية.
الضمان التشغيلي 4 - منع التلوث والتحكم فيه، والمواد الخطرة، وكفاءة الموارد	• إدارة الملوثات الناتجة عن المشروع وتقليلها، بما في ذلك النفايات الخطرة وغير الخطرة، لكيلا تشكل مخاطر ضارة على صحة الإنسان والبيئة؛ • ووضع إطار عمل لمراعاة فعالية استخدام جميع المواد الخام والموارد الطبيعية الخاصة بالمشروع، خاصة الكهرباء والمياه	**ينطبق** • سينتج عن المشروع نفايات، ومياه صرف، وانبعاثات هوائية وضوضاء خلال أنشطة الهدم والإنشاء. يتضمن المشروع هدم وإنشاء المباني، وسيتطلب استخدام مواد خطرة في جميع مراحل المشروع. سينتج عن المشروع أيضًا توليد نفايات خطرة خلال جميع مراحله.
الضمان التشغيلي 5 - ظروف العمل والصحة والسلامة	• حماية حقوق العاملين؛ • وإنشاء علاقات بين الموظفين وأصحاب العمل والحفاظ عليها وتحسينها؛ • والحث على الامتثال للمتطلبات القانونية القومية وتوفير المتطلبات التكميلية لضمان تحقيق الرعاية اللازمة في الجوانب التي لا يغطيها القانون الوطني أو لا يتسق فيها مع الضمان التشغيلي؛	**ينطبق** • ستتطلب أنشطة المشروع توظيف عمالة ماهرة وغير ماهرة. ستشكل الأنشطة الممارسة مخاطر محتملة على صحة وسلامة المرضى والأطباء وموظفي المجال الطبي وغير الطبي والمجتمع المحيط.

الضمان التشغيلي للبنك الإفريقي للتنمية	الأهداف	ينطبق على المشروع (نعم/لا)
	• وتنسيق متطلبات البنك لتتماشى مع معايير العمل الأساسية الخاصة بمنظمة العمل الدولية (ILO) واتفاقية حقوق الطفل الصادرة عن منظمة اليونيسيف، في الجوانب التي لا يوفر فيها القانون الوطني حماية مماثلة؛ • وحماية القوة العاملة من عدم المساواة والإقصاء الاجتماعي وعمالة الأطفال والعمالة القسرية؛ • ووضع متطلبات لتوفير ظروف عمل آمنة وصحية.	

البدائل الموضوعة في الاعتبار

ينص دليل تقييم الأثر البيئي الصادر عن جهاز شؤون البيئة المصري على ضرورة وضع بدائل المشروع المقترح في الاعتبار بما في ذلك جوانب مثل الموقع والتصميم. ويجب أيضًا الوضع في الاعتبار بديل "تنفيذ المشروع"، ويشمل ذلك عواقب عدم تنفيذ المشروع المقترح. فيما يلي بدائل المشروع المقترح الموضوعة في الاعتبار: "عدم تنفيذ المشروع"؛ والموقع؛ والتصميم والإنشاء. كان القرار النهائي هو أن "عدم تنفيذ المشروع" لم يكن بديلًا عمليًا أو مرغوبًا فيه، ويُفضل المُضي في المشروع بمفهومه الحالي عن المواقع والتصميمات والإنشاءات البديلة.

الآثار البيئية والاجتماعية المحتملة

لم يتم تحديد أي آثار كبيرة في التقييم، وبشكل عام، يتوقع أن إنشاء المشروع سيقدم رعاية صحية من الطراز العالمي للمنطقة بتحسينه لسبل الوصول للعلاج وتوفير فرص عمل وتعزيز نمو الاقتصاد دون التسبب في أي آثار ضارة بدرجة كبيرة لا يمكن تخفيفها بصورة عملية وفعالة. تتضمن الفوائد الأخرى للمشروع وتحسين معيشة الحرفيين المحليين وتحقيق عائدات للمحافظة.

تستهدف الآثار الإيجابية الاقتصاد وصحة السكان في المقام الأول، فسيوفر المشروع فرص عمل لمختلف فئات العمالة طوال فترة تشغيله. سوف يضمن توسع مستشفى من الدرجة الأولى في المنطقة توفير الرعاية المناسبة للناس وتعزيز الصحة العامة في المجتمع. تتضمن الفوائد الأخرى خلق فرص عمل وتعزيز الاقتصاد المحلي/الأنشطة التجارية وتحسين معيشة الحرفيين المحليين وتحقيق عائدات لمحافظات متعددة.

وفي المقابل، يحتمل أن تنتج بعض الآثار السلبية عن المشروع أثناء مرحلة الإنشاء وتشمل ما يلي:

- زيادة الانبعاثات التي قد تؤثر سلبًا على جودة الهواء المحيط نتيجة لأنشطة الإنشاء؛
- وزيادة انبعاثات الضوضاء التي قد تؤثر على المجتمعات المجاورة خلال أنشطة والإنشاء؛
- وزيادة توليد المخلفات، بما في ذلك مواد المخلفات الخطرة، واحتمالية تلويث التربة وسوء التخلص من المخلفات الخطرة في مدافن النفايات المحلية؛
- وزيادة مستويات الضوضاء أثناء اليوم خلال أنشطة والإنشاء؛
- وتعرض العمال وأفراد المجتمع لإصابات بسبب المخاطر الميكانيكية و/أو الكهربائية.

تتضمن الآثار السلبية الناتجة أثناء تشغيل المشروع:

- زيادة استهلاك المياه للأغراض الشخصية والري (أي لأعمال تنسيق الحدائق)؛
- وزيادة إنتاج مياه الصرف؛
- زيادة إنتاج النفايات، وخاصة النفايات الخطرة، وتخزينها والتخلص منها بشكل غير صحيح، مما قد يؤثر على القدرة الاستيعابية لمكبات النفايات ويسبب التلوث؛
- واحتمالية تسرب السوائل الخطيرة من المعامل إلى شبكة الصرف المحلية؛
- الإصابات الميكانيكية والكهربائية للمرضى والموظفين أثناء مرحلة التشغيل.

قدمت الاقتراحات الخاصة بتدابير التخفيف التي يمكن اتخاذها للتعامل مع هذه التأثيرات المحتملة لمرحلتي المشروع، وإذا تم تنفيذ تدابير التخفيف هذه بفعالية، فمن المتوقع أن المشروع سينجح في مواجهة تحدي توفير قدرة استيعابية أكبر لتخزين الوقود بطريقة تراعي الاستدامة البيئية والاجتماعية. أما الآثار المتبقية فستظهر بعد تنفيذ إجراءات التخفيف لكل أثر تم تحديده.

الآثار البيئية والاجتماعية وتدابير التخفيف

أثناء مرحلة الإنشاء:

العنصر		الأثر المحتمل	تدابير التخفيف/الإدارة	فنة الأثر	خطورة الأثر قبل التخفيف	الأثر المتبقي بعد التخفيف	المسؤولية	الإطار الزمني	التكلفة المرتبطة (بالدولار الأمريكي)[2]
مرحلة الإنشاء									
البيئة	الهواء	انخفاض نوعية الهواء	• التأكد من تطويق جميع الأماكن التي تتم فيها أعمال الحفر وأعمال التربة • إصدار إعلانات عامة لإبلاغ المجتمع المحيط بشأن توقيت أعمال الإنشاء وموقعها • تنفيذ أعمال الإنشاء خلال فترة النهار فقط • الحرص على أن تكون الأرض في المناطق التي تعمل فيها المركبات والماكينات بكثافة أرضًا مدمجة ومضغوطة جيدًا • التربة الناتجة عن أعمال التربة سيتم تكديسها في مناطق ملائمة مع تطبيق تدابير السيطرة على الغبار مثل التغطية • رش أسطح الغبار في مناطق الإنشاء بالماء بانتظام • تطبيق إجراءات قمع الغبار مثل رش الطرق بالماء، ومراقبة حدود السرعة وصيانة الشاحنات • تغطية الشاحنات الناقلة للمواد التي يمكن أن ينتثر منها الغبار والحد من ارتفاعات الإنزال عند تحميل التربة في الشاحنات بواسطة الرافعات • عمل صيانة ومراقبة لجميع المعدات التي تعمل بنظام حرق الوقود بانتظام • الحرص على ارتداء جميع العاملين لمعدات الوقاية الشخصية الملائمة لتجنب استنشاق الغبار والغازات • لا يُسمح بحرق النفايات، مثل الأكياس البلاستيكية و أكياس الأسمنت والقمامة داخل الموقع • التأكد من إيقاف تشغيل المعدات/الآلات في حالة عدم استخدامها • التأكد من امتثال المركبات والشاحنات لحدود انبعاثات العوادم المحددة في قرار رئيس الوزراء 2011/1095 • يجب أن تمتثل وحدات توليد الطاقة لحدود الانبعاثات المنصوص عليها في القرار 2015/964 المُعدّل للقانون 1994/4 للمحركات التي تعمل بالديزل قد تشمل تدابير التخفيف الإضافية لانبعاثات الأتربة المستنشقة (PM10) ما يلي: • يجب تغطية المواد التي يحتمل أن تنثر الغبار أو منعها من التعرض للرياح بطرق أخرى ملائمة • ينبغي تغطية التربة والأكوام الترابية الأخرى والمواد الأخرى المولدة للغبار، التي ستبقى دون توزيع لفترة من الوقت، أو جعلها مستقرة بأي طريقة أخرى لتقليل الغبار المتطاير بسبب الرياح • عند وجود أنشطة يمكن أن تولد سحبًا من الغبار، يجب تطبيق أساليب الحد من الغبار، على سبيل المثال سيقوم مدير الموقع بتحديد وجوب رش المياه وترطيب الطرق الموصلة وعدد مرات الرش بناءً على ظروف الموقع. ينبغي استخدام أساليب الحد من الغبار خلال الطقس الجاف • تنبغي حماية المواد المخزنة في الموقع، بما في ذلك أكوام التربة، عن طريق تدابير ملائمة، مثل الأغشية أو الرش بعامل ربط • سيتم تغطية جميع الحاويات أو إغلاقها لمنع تسرب الغبار ومواد النفايات أثناء التحميل والنقل	مباشر	بالغ	متوسط	مسؤول الصحة والسلامة والبيئة لدى أندلسية استشاري مستقل في البيئة والسلامة	أثناء الإنشاء	متضمنة في عقد الهندسة والتوريد والإنشاء

[2] تدابير التخفيف/الإدارة المحددة **بخط عريض** سيتم تمويلها عن طريق الميزانية المخصصة لخطة الإدارة البيئية والاجتماعية.

			• ينبغي بذل الجهود لاستخدام الكهرباء المستمدة من الشبكة وينبغي تقليل استخدام المولدات التي تعمل بالديزل • ينبغي صيانة أجهزة المولدات التي تعمل بالديزل بانتظام لتقليل الانبعاثات • ينبغي إبقاء ارتفاع أكوام التربة عند الحد الأدنى للارتفاع وجعلها متدرجة للحفاظ على توازن المنحدرات الجانبية لتقليل خطر التعرية • سيتم تخطيط الأنشطة للتأكد، بالحد الممكن عمليًا، من أن الأنشطة المولدة للغبار بشكل خاص لا يتم تنفيذها في ظروف مناخية غير ملائمة (مثل الجفاف/الرياح) إلا مع تطبيق أساليب الحد من الغبار • ينبغي الإبقاء على جميع مناطق العمل نظيفة ومرتبة • سيتم وضع المواد بعيدًا عن المناطق السكنية أو الأماكن العامة أو المصارف						
الضوضاء	فقدان السمع بسبب الضوضاء	• تنفيذ أعمال الإنشاء خلال فترة النهار • وضع لافتات في المناطق التي سيتم فيها تنفيذ أنشطة تبعث ضوضاء عالية • إصدار إعلانات عامة لإبلاغ المجتمع المحيط بشأن توقيت أعمال الإنشاء وموقعها • ستوضع المعدات الثابتة والمتحركة (مثل المولدات) بعيدًا عن المستقبلات الحساسة • الحرص على تزويد المولدات ومدقات الخوازيق والأدوات التي تعمل بالهواء المضغوط وغيرها من المعدات الثقيلة بمرشحات ضوضاء مناسبة مثل خافض/كاتم الصوت • يجب تحديد مناطق الضوضاء المرتفعة والمعدات التي تصدر ضوضاء مرتفعة وينبغي تزويد العاملين في هذه المناطق بمعدات الوقاية السمعية • تُزود المعدات الثابتة بوسائد مطاطية أو مصنوعة من مواد أخرى مناسبة بحيث تمتص تأثير الاهتزازات وتمنعها من الانتقال • الصيانة المنتظمة للمعدات والماكينات الثقيلة • إيقاف تشغيل الماكينات والمعدات غير المستخدمة • تجنب إجراء الأنشطة المسببة للضوضاء المرتفعة قبل شروق الشمس وبعد الغروب • تجنب نقل المواد إلى الموقع قبل شروق الشمس وبعد الغروب • سلوك الطرق البعيدة عن المناطق السكنية	مباشر	متوسط	ثانوي	مسؤول الصحة والسلامة والبيئة لدى أندلسية استشاري مستقل في البيئة والسلامة	أثناء الإنشاء	متضمنة في عقد الهندسة والتوريد والإنشاء
الماء	انخفاض إمداد المياه للمجتمع المحلي	• الحرص على الحد من استهلاك المياه أثناء تنفيذ أنشطة الإنشاء لأقل قدر ممكن عمليًا • ولتحقيق هذا الغرض يؤخذ في الاعتبار أي إعادة استعمال ممكنة للمياه الرمادية وأي مياه مجمعة سابقًا وأي مياه معالجة من أجل استخدامها في قمع الغبار المتطاير • ينبغي فحص حاويات/صهاريج المياه والخراطيم والوصلات بانتظام للتأكد من أنها لا تسرب المياه ولاكتشاف أي تسريب على الفور • التأكد من أن أنشطة الغسيل/التنظيف (مثل غسل الماكينات إلخ) تُجرى وفقًا لطرق لا تتطلب سوى استهلاك منخفض من الماء أو استخدام التنظيف الجاف إذا أمكن • تركيب أدوات موفرة للمياه (الصنابير، رؤوس الدش، المبولات، إلخ.) في الحمامات الملحقة بمكاتب الموقع • رصد وتسجيل إمداد المياه والكميات المستهلكة من المياه بانتظام • يجب تجنب التخلص من مياه الصرف في التربة أو المياه الجوفية مهما كلف الأمر • استخدام تربة عضوية صناعية لأي مسطحات خضراء مخططة	مباشر	ثانوي	ثانوي	مسؤول الصحة والسلامة والبيئة لدى أندلسية مسؤول السلامة والصحة والبيئة لدى المقاول	أثناء الإنشاء	متضمنة في عقد الهندسة والتوريد والإنشاء
النفايات	تلوث التربة	• التأكد من أنه يتم تخزين كافة نفايات الإنشاء في الموقع والتخلص منها بشكل ملائم في منشأة مرخص لها • يجب وضع حاويات نفايات مغطاة بشكل ملائم على صينية تقطير ويجب إتاحتها طوال الوقت لتقليل النفايات ويجب وضعها بشكل ملائم لجمع النفايات منها يوميًا لنقلها من الموقع والتخلص منها في منشأة مرخص لها • ينبغي وضع علامة واضحة على صناديق النفايات ورصها بصورة تسمح بالتحكم في النفايات والتخلص منها بشكل آمن • يجب توفير صناديق نفايات مختلفة لمجاري النفايات المختلفة من أجل ضمان فصل النفايات بشكل صحيح	مباشر	ثانوي	ثانوي	مسؤول السلامة والصحة والبيئة لدى المقاول مسؤول الصحة والسلامة والبيئة لدى أندلسية	أثناء الإنشاء	متضمنة في عقد الهندسة والتوريد والإنشاء

			• ينبغي إزالة حاويات النفايات يوميًا لمنع تطاير النفايات بسبب الرياح و/أو الإزعاج البصري • يجب إزالة كل النفايات العامة من الموقع يوميًا والتخلص منها في منشأة مسجلة أو مرخصة للتخلص من النفايات. يجب أن يحتفظ الموقع بسجلات عمليات التخلص من النفايات بشكل صحيح. يُحظر ترك حاويات النفايات أو تخزينها في الموقع تحت أي ظروف • يجب إعادة تدوير المواد الناتجة عن أي أعمال تربة وإعادة استخدامها حيثما أمكن • يجب خلط الخرسانة داخل منطقة مخصصة في كل موقع. يجب تنظيف المناطق التي يتم فيها خلط الخرسانة وإزالة المعدات منها في نهاية كل يوم. يجب خلط الخرسانة على سطح غير منفذ و/أو صينية تقطير واحتواء أي تسرب. يجب التحكم في نشاط خلط الخرسانة وقياسه وفقًا لمتطلبات النشاط لمنع النفايات • يحظر خلط النفايات الخطرة أو جمعها مع النفايات العامة التي من المحدد التخلص منها في أحد مواقع المكبات المحلية • يجب التخلص من النفايات الخطرة باستخدام أساليب مناسبة للحالة وفقًا لخطة إدارة النفايات التي سيتم إعدادها للمشروع. يجب أن يحدد مدير شؤون الصحة والسلامة والبيئة موقعًا معتمدًا للتخلص من النفايات في بداية المشروع • يجب وضع علامات واضحة على صناديق النفايات الخطرة وتخزينها في مساحة مغلقة (أو فوق سطح غير منفذ) وتغطيتها بغطاء • يجب إزالة كل النفايات الخطرة من الموقع بانتظام والتخلص منها في منشأة مسجلة أو مرخصة للتخلص من النفايات الخطرة. يجب أن يحتفظ الموقع بسجلات لوثائق التخلص من النفايات الخطرة بشكل صحيح. يُحظر ترك حاويات النفايات الخطرة أو تخزينها في الموقع تحت أي ظروف • قد يكون من السهل نقل النفايات إلى نقطة مركزية يمكن جمعها منها ككتلة واحدة بواسطة شركة التخلص من النفايات. بالرغم من ذلك، ينبغي ملاحظة أن نقل المواد الخطرة يجب أن يتم وفقًا للضوابط التشريعية السارية					
التربة	تلوث التربة	• عدم تخزين أي سوائل خطرة (مثل الدهانات والوقود والمذيبات) على سطح الأرض مباشرة أثناء الإنشاء • يجب وضع أي مولدات موجودة في الموقع على صينية تقطير لمنع تلوث التربة أو المياه السطحية. • تخصيص مناطق محددة لتخزين الدهانات والزيوت والشحوم والوقود ومناولتها بشكل سليم • ينبغي أن تتضمن مناطق إعادة التزويد بالوقود والصيانة أحد أنظمة الاحتواء الثانوي لتجنب حوادث الانسكاب • ينبغي توزيع عدد الانسكاب في جميع أنحاء الموقع في أماكن استراتيجية لضمان التنظيف السريع بعد الانسكاب • ينبغي توصيل جميع المراحيض الموجودة في الموقع بخزان صرف صحي يتم إنشاؤه في الموقع. وينبغي أن تكون سعته 110% على الأقل من الكمية المُقدرة من الصرف الصحي/مياه الصرف المجمعة • ينبغي فحص الخزانات دوريًا للتأكد من عدم وجود تسرب أو امتلائها بصورة زائدة • ينبغي التأكد من إجراء الفحوصات والصيانة الدورية لخزانات الصرف الصحي للسماح بالتشغيل الفعال لنظام جمع مياه الصرف والتحقق من ذلك. • يتم جمع مياه الصرف الصحي بواسطة مقاول مرخص، ويتم تصريفها إلى موقع مرخص (محطة لمعالجة مياه الصرف الصحي أو نقطة تصريف) • الاحتفاظ بوثائق جمع مياه الصرف والتخلص منها في الموقع	مباشر	ثانوي	ثانوي	مسؤول الصحة والسلامة والبيئة لدى أندلسية مسؤول السلامة والصحة والبيئة لدى المقاول	أثناء الإنشاء	متضمنة في عقد الهندسة والتوريد والإنشاء
البيئة البيولوجية (النباتات والحيوانات)	تدمير الموائل وإزعاج الحيوانات	• اقتصار أنشطة الإنشاء على حدود منطقة العمل، وإصلاح أي ضرر ناتج عن أي أعمال خارجها	مباشر	ثانوي	ثانوي	مسؤول الصحة والسلامة والبيئة لدى أندلسية	أثناء الإنشاء	متضمنة في عقد الهندسة والتوريد والإنشاء

							مسؤول السلامة والصحة والبيئة لدى المقاول			
الوضع الاجتماعي والاقتصادي	الهجرة الداخلية التي يتطلبها المشروع	استياء المجتمع المحلي من ذهاب فرص العمل للوافدين من خارجه	• تجهيز الأوصاف الوظيفية لفرص العمل وسلسلة التوريد أثناء مرحلة إنشاء المشروع لتقديمها للمجتمع المحلي والشركات المحلية وتوفيرها من خلالهم • تعيين مسؤول للتواصل المجتمعي خاص بالمشروع • إعداد خطة لإشراك أصحاب المصلحة تتضمن اجتماعات إعلامية قبل الإنشاء مع السكان المحليين لمناقشة الآثار المحتملة وتدابير التخفيف، بالإضافة إلى فرص العمل • إعداد خطة إدارة لأماكن إقامة العمال في حالة توظيف عدد كبير من العمال المهاجرين. ينبغي أن تتضمن الخطة متطلبات اختيار أماكن الإقامة بالإضافة إلى خطة تفتيش لضمان امتثال أماكن الإقامة التي تم توفيرها للمعايير.	مباشر	متوسط	ثانوي	مسؤول امتثال العمالة لدى أندلسية	قبل الإنشاء أثناء الإنشاء	متضمنة في عقد الهندسة والتوريد والإنشاء
	عمل الأطفال/العمالة القسرية	تشغيل الأطفال والعمالة القسرية ومخالفة اللوائح	• إعداد قواعد سلوك يتعرف عليها جميع العاملين لاحقًا كجزء من التدريب التمهيدي • التأكد من أن سياسات الموارد البشرية وإجراءاتها وقواعد السلوك لدى جميع المقاولين والمقاولين من الباطن تتسق مع القانون المصري وتنفيذ خطة مراقبة دورية للتأكد من تطبيقها. في حالة عدم توفر مدونة قواعد سلوك لدى المقاولين، التأكد من توقيع جميع المقاولين والعاملين لديهم على مدونة قواعد السلوك الخاصة بمجموعة أندلسية • التأكد من موافقة الموردين والمقاولين من الباطن على أحكام مدونة قواعد السلوك ووجود هذه الأحكام كبنود في العقود • إجراء مراقبة دورية وعشوائية (مرة في الأسبوع على الأقل) على جميع العاملين بالموقع باستخدام قائمة ببنود التفتيش للتأكد من الالتزام بمدونة قواعد السلوك وإجراءاتها • مراجعة وثائق الاعتماد لكل من المقاولين من الباطن والموردين للتأكد من الامتثال للوائح • إعداد آلية صارمة للاختيار والتقييم وتنفيذها من أجل اختيار المقاولين والمقاولين من الباطن وإدارة تعاقداتهم مع التركيز على البنود المتعلقة بالبيئة والصحة والسلامة والعمل.	مباشر	متوسط	ثانوي	مسؤول امتثال العمالة لدى أندلسية	قبل الإنشاء أثناء الإنشاء	متضمنة في عقد الهندسة والتوريد والإنشاء
التراث الثقافي		تدمير التراث الثقافي أو الإخلال به أو إزالته	• أي اكتشافات وليدة الصدفة أو اشتباه في وجود دليل على مواد أثرية و/أو تاريخية سيتم الإبلاغ عنها فورًا بواسطة أي من عمال البناء، أو الأطراف الأخرى المشاركة في مرحلة الإنشاء، وينبغي إيقاف جميع الأعمال فورًا حتى إشعار آخر • ينبغي الإبلاغ فورًا عن الاكتشافات وليدة الصدفة إلى هيئة الآثار المصرية	مباشر	متوسط	ثانوي	مسؤول الصحة والسلامة والبيئة لدى أندلسية مسؤول السلامة والصحة والبيئة لدى المقاول	أثناء الإنشاء	متضمنة في عقد الهندسة والتوريد والإنشاء
الصحة والسلامة	السلامة الكهربائية	الإصابة الناتجة عن الصعق الكهربائي والحروق	• وضع علامات تحذيرية على الأجهزة والخطوط الكهربائية الموصلة • إقفال الأجهزة أثناء التنظيف أو الصيانة (تفريغ شحنها وتركها مفتوحة باستخدام جهاز قفل ذي نظام تحكم) ووسمها (وضع علامة تحذيرية على القفل) • تفقد جميع الأسلاك الكهربائية والكابلات والأدوات الكهربائية اليدوية للتأكد من عدم وجود أسلاك مقطوعة أو مكشوفة ومن امتثال توصيات الجهة المصنعة فيما يتعلق بجهد التشغيل الأقصى المسموح به للأدوات اليدوية المحمولة • حماية الأسلاك الكهربائية وأسلاك التمديدات من التلف الناتج عن حركة المركبات بعزلها أو تعليقها فوق مناطق مرور المركبات • وضع علامات مناسبة على معدات الجهد العالي ("خطر كهرباء") وفي أماكن الدخول المقيد أو الممنوع	مباشر	متوسط	ثانوي	مسؤول الصحة والسلامة والبيئة لدى أندلسية مسؤول السلامة والصحة والبيئة لدى المقاول	أثناء الإنشاء	متضمنة في عقد الهندسة والتوريد والإنشاء

			• تحديد المناطق تحت أماكن الجهد العالي وحولها ووضع لافتات "ممنوع الاقتراب" عندها • التأكد من أن العاملين بالأعمال الكهربائية مؤهلون لذلك ويعملون تحت إشراف مناسب						
	الآلات والسلامة من الأخطار الميكانيكية	الإصابات الناتجة عن سقوط الأجسام وتحريك المعدات/الآلات	• اتباع استراتيجيات السلامة الواردة من جهة التصنيع لحماية العاملين أثناء استعمالهم للماكينات • وضع إجراءات للعمل الآمن والاحتفاظ بها ومراجعتها • إجراء تقييم للمخاطر لضمان سلامة استخدام الماكينات من خلال تقليل المخاطر المرتبطة بها • ينبغي لصاحب العمل إتمام تقييم المخاطر للتأكد من أن الماكينات آمنة ولتوفير نظام عمل آمن • ينبغي استشارة العاملين لإبداء آرائهم وتجاربهم، وتجب مشاركتهم مشاركة فعالة في إجراءات تقييم المخاطر • السيطرة على المخاطر من خلال الضوابط الهندسية، كأن يكون بالماكينة أو المعدة جزء متحرك ومكشوف أو موضع قارص مكشوف يمكن أن يهدد سلامة العامل، فينبغي تزويد الماكينة أو المعدة وحمايتها بحاجز أو بأداة أخرى تمنع الوصول للجزء المتحرك أو الموضع القارص • يجب تصميم الحواجز وتركيبها بما يتوافق مع المعايير المناسبة لسلامة الماكينة • اتخاذ ضوابط إدارية تشمل الإجراءات الملائمة والتدريب ونظم العمل واستخدام معدات الحماية الشخصية	مباشر	متوسط	ثانوي	مسؤول الصحة والسلامة والبيئة لدى أندلسية مسؤول السلامة والصحة والبيئة لدى المقاول	أثناء الإنشاء	متضمنة في عقد الهندسة والتوريد والإنشاء

أثناء مرحلة التشغيل:

خطة المراقبة البيئية والاجتماعية

في مرحلة الإنشاء:

العنصر	الجانب	المعامل الواجب مراقبته (أي النشاط)	الطريقة	الموقع	مؤشر الأداء الرئيسي (KPI)	معدل التكرار	المسؤولية	التكلفة (بالدولار الأمريكي)
البيئة	الهواء	المعاملات المدرجة في Table 3-2	باستخدام أداة/معمليًا	أقرب مستقبل حساس (على الأقل مستقبل واحد عكس اتجاه الريح وآخر باتجاه الريح في الموقع)	عدد الشكاوى من العاملين/الأطراف الثالثة التوافق مع القانون 1994/4	سنويًا	مسؤول الصحة والسلامة والبيئة لدى أندلسية استشاري/معمل مستقل في البيئة والسلامة	6000
	الضوضاء المحيطة	المعاملات المدرجة في Table 3-6	باستخدام أداة/معمليًا بصريًا	أقرب مستقبل حساس (على الأقل مستقبل واحد عكس اتجاه الريح وآخر باتجاه الريح في الموقع)	عدد الشكاوى من العاملين/الأطراف الثالثة الغبار والجسيمات التوافق مع القانون 1994/4	سنويًا	مسؤول الصحة والسلامة والبيئة لدى أندلسية استشاري/معمل مستقل في البيئة والسلامة	3000

	المواد الخطرة	تدهور الحالة الصحية بسبب التهاب الكبد والكليتين	• الحرص على تطويق جميع أماكن تخزين المواد الخطرة ووضع الكثير من اللافتات • توفير التدريب المناسب للعاملين بالموقع على تداول المواد الخطرة واستخدامها • الحفاظ على ترتيب مناطق التخزين والتأكد من أنها منظمة وآمنة ونظيفة وجافة • تسجيل جميع المواد الخطرة المتداولة في الموقع في سجل مرفق به صحيفة بيانات سلامة المواد (MSDS) وإتاحتها باللغة المناسبة • إعداد إجراءات للتعامل والمعالجة في حالة حدوث انسكاب • توفير نظام احتواء ثانوي للانسكابات لأماكن تخزين الكميات الكبيرة والصهاريج • توفير أدوات التعامل مع الانسكابات وطفايات الحريق في الأماكن التي توجد بها مواد خطرة • يجب تخزين النفايات والكيماويات والوقود في مناطق احتواء غير منفذة بسعة 110% من سعة الحاوية • إجراء تفتيش دوري على مرافق الاحتواء الكبيرة وصهاريج المواد السائلة للتأكد من سلامة التخزين • توفير معدات حماية شخصية مناسبة للمهمة للوقاية من الإصابات والتعرض للمواد الخطرة • تدريب العاملين على اختيار معدات الحماية الشخصية المناسبة واستخدامها وصيانتها. فحص معدات الوقاية الشخصية وصيانتها واستبدالها عند اللزوم • إعداد قائمة بالمواد الخطرة ووضع سياسة وإجراءات واضحة للسيطرة على المخاطر وإدارتها (الحوادث وحالات الإصابة والطوارئ) • تصنيف المناطق التي قد يوجد بها أجواء خطرة متفجرة أو كيماويات وتقسيمها إلى نطاقات • تقديم المعلومات والتدريب الملائم للعاملين للتحكم في المخاطر الناشئة عن المواد الخطرة والتعامل معها	مباشر	متوسط	ثانوي	مسؤول الصحة والسلامة والبيئة لدى أندلسية مسؤول السلامة والصحة والبيئة لدى المقاول	أثناء الإنشاء	4.000
	إدارة الحركة المرورية	الحوادث والتصادمات	• وضع خطة لإدارة المرور أثناء مرحلة الإنشاء • تدريب وترخيص سائق المركبات الصناعية على التشغيل الآمن للمركبات المتخصصة مثل الجرافات، بما في ذلك التحميل والتفريغ الآمن وحدود الحمولات المسموح بها • يجب أن يرتدي السائق وجميع ركاب المركبة أحزمة الأمان • التأكد من أن المعدات المتحركة ذات الرؤية الخلفية المحدودة مزودة بصافرات إنذار للحركة الخلفية • تحديد الأماكن التي لها حق الطريق (بتمييزها عن مناطق مرور المارة)، وحدود السرعة بالموقع، ومتطلبات فحص المركبات، وقواعد التشغيل وإجراءاته (مثل منع	مباشر	متوسط	ثانوي	مسؤول الصحة والسلامة والبيئة لدى أندلسية مسؤول السلامة والصحة والبيئة لدى المقاول	أثناء الإنشاء	متضمنة في عقد الهندسة والتوريد والإنشاء

			تشغيل الرافعات الشوكية والشوكة لأسفل)، والتحكم في نمط الحركة المرورية أو اتجاهها • اقتصار الحركة المرورية لمركبات النقل والمركبات الخاصة على طرق ومناطق محددة، وتفضيل مسارات الاتجاه الواحد إن أمكن • لن يتم نقل أي شخص على ظهر المركبات الخفيفة • استخدام الهواتف المحمولة أثناء القيادة محظور • يتم وضع قواعد للمرور وإبلاغ السائقين بها من خلال جلسات تدريبية ومحاضرات						
حالات الانزلاق والتعثر والسقوط	الإصابات	• تقييم أسباب مخاطر الانزلاق والتعثر والسقوط والتعامل معها وفقًا لذلك • وضع المعدات بالشكل الذي يتجنب تقاطع الأسلاك مع مسارات عبور المارة واستخدام أوقية للأسلاك عند اللزوم لتغطيتها • الحرص على استخدام الأحذية المناسبة في الأماكن التي يُحتمل فيها خطر الانزلاق والتعثر والسقوط • التأكد من أن البُسط والحصائر ثابتة ثباتًا آمنًا في أماكنها وأن حوافها لا تمثل خطر تعثر أحد المارة • تحسين الرؤية والإضاءة ووضع درابزين. وضع علامات تحديد المسارات أو غيرها من علامات الأرضيات عند عدم وضوح الرؤية • الحرص على وضع الحواجز حيث تستدعي الضرورة، خصوصًا حول الأماكن المنخفضة عن سطح الأرض والتأكد من تغطية جميع الحفر والفتحات	مباشر	متوسط	ثانوي	مسؤول الصحة والسلامة والبيئة لدى أندلسية مسؤول السلامة والصحة والبيئة لدى المقاول	أثناء الإنشاء	متضمنة في عقد الهندسة والتوريد والإنشاء
المناولة اليدوية	المشكلات الصحية المرتبطة بأقراص النخاع الشوكي واضطرابات الجهاز العضلي الهيكلي التي تتراوح شدتها من مشكلات ثانوية يمكن السيطرة عليها طبيًا إلى إصابات تسبب الإعاقة	• تطبيق نظام آمن لخطط العمل من أجل المهام الخاصة بالموقع تحديدًا، وتوفير المعلومات عن استخدام الأدوات الميكانيكية المساعدة • إعادة تنظيم أنشطة العمل للتمكن من تداول الأحمال على ارتفاعات آمنة أو لإعطاء توجيهات للعاملين على كيفية استخدام الأدوات المساعدة في التداول أو كيفية تداول الأحمال بأمان • استخدام الأدوات الميكانيكية المساعدة في النشاط بأكمله أو بعضه • إعادة تصميم العمليات اليدوية لتجنب أنشطة الرفع/الأنشطة المتكررة • تركيب أدوات الرفع الميكانيكية المساعدة حيث يمكن ذلك • إعادة ترتيب منطقة العمل أو المواد • توجيهات تقنيات الرفع الآمن في الأماكن التي سيستمر بها نشاط التداول • تطبيق نظام العمل بالوردية بحيث لا يقضي العامل مدة طويلة في عمل هذا النشاط • تقييم المهام العملية بأكملها مع التركيز تحديدًا على المهام الثقيلة وذات الطبيعة التكرارية	مباشر	متوسط	ثانوي	مسؤول الصحة والسلامة والبيئة لدى أندلسية مسؤول السلامة والصحة والبيئة لدى المقاول	أثناء الإنشاء	متضمنة في عقد الهندسة والتوريد والإنشاء
كوفيد-19	حالات كوفيد-19 وتفشيه	• ارتداء كمامة للوجه والتباعد البدني عن الآخرين بمسافة 1.5 متر على الأقل. • تجنب المصافحة باليدين. • غسل اليدين جيدًا بشكل منتظم باستخدام الماء والصابون أو تنظيف اليدين باستخدام معقم يدين ذي أساس كحولي وفقًا لتوصيات منظمة الصحة العالمية (WHO). • اتباع نظافة تنفسية جيدة. ويعني ذلك تغطية الفم والأنف باستخدام المرفق المثني أو المنديل عند السعال أو العطس. • تجنب لمس العينين والأنف والفم. • تنظيف وتطهير الأجسام والأسطح المتعرضة للمس المتكرر. • إبلاغ المشرف أو المدير عند شعور أحد العاملين بالمرض، وخصوصًا في حالة الإصابة بحمى و/أو سعال و/أو صعوبة في التنفس. • التأكد من تطعيم جميع العاملين ضد فيروس كوفيد-19 قبل التعيين. تتيح وزارة الصحة اللقاحات كذلك وتوفرها مجانًا.	مباشر/غير مباشر	بالغ	متوسط	مسؤول الصحة والسلامة والبيئة لدى أندلسية مسؤول السلامة والصحة والبيئة لدى المقاول	أثناء الإنشاء	متضمنة في عقد الهندسة والتوريد والإنشاء

صحة وسلامة المجتمع	المرور	حوادث المرور	• وضع خطة لإدارة المرور أثناء مرحلة الإنشاء • الحرص على اتباع جميع المركبات/الشاحنات لقواعد المرور • يقتصر نقل المواد إلى موقع المشروع على ساعات العمل بالنهار فقط • تجنب إيصال المواد في ساعات الذروة حتى لا يتفاقم الاختناق المروري • تنظيم مواعيد وصول حافلات العاملين ومغادرتها لتجنب الاختناق المروري • الحرص على تلقي جميع السائقين التدريب المناسب	غير مباشر	متوسط	ثانوي	مسؤول الصحة والسلامة والبيئة لدى أندلسية مسؤول السلامة والصحة والبيئة لدى المقاول	أثناء الإنشاء	متضمنة في عقد الهندسة والتوريد والإنشاء
	الأمن	أخطار الصحة والسلامة على المجتمع سرقة المعدات/العبث بها	• إقامة سور تأمين حول موقع المشروع • تدريب رجال الأمن على عمل دوريات بانتظام في الموقع • تفقد الهوية الشخصية لجميع الأفراد عند دخول الموقع للتأكد من انتمائهم للعمالة • الحرص على تخزين المعدات بأمان والحد من إمكانية الوصول إليها		متوسط	ثانوي	مسؤول الصحة والسلامة والبيئة لدى أندلسية الأمن لدى شركة أندلسية	أثناء الإنشاء	متضمنة في عقد الهندسة والتوريد والإنشاء

العنصر	الجانب	المعامل الواجب مراقبته (أي النشاط)	الطريقة	الموقع	مؤشر الأداء الرئيسي (KPI)	معدل التكرار	المسؤولية	التكلفة (بالدولار الأمريكي)
	الضوضاء في مكان العمل	المعاملات المدرجة في Table 3-7	باستخدام أداة/معمليًا	العمل الذي يتضمن أنشطة تصدر ضوضاء مرتفعة	عدد الشكاوى من العاملين/المرضى/الزوار التوافق مع القانون 1994/4	أثناء الأنشطة التي تصدر ضوضاء مرتفعة	مسؤول الصحة والسلامة والبيئة لدى أندلسية مسؤول الصحة والسلامة والبيئة لدى المقاول والمقاول من الباطن استشاري/معمل مستقل في البيئة والسلامة	3000
		الأنشطة التي تصدر عنها ضوضاء	بصريًا	جميع مواقع الإنشاء	عدد الشكاوى من الضوضاء من العاملين/المرضى/الزوار	يوميًا	مسؤول الصحة والسلامة والبيئة لدى أندلسية مسؤول الصحة والسلامة والبيئة لدى المقاول والمقاول من الباطن	التكلفة غير المباشرة
	الماء	كمية المياه المستهلكة بالمتر المكعب (م3)	فحص الإيصالات	م3 من المياه المستهلكة شهريًا/ساعات العمل الشهرية	-	شهريًا	مسؤول الصحة والسلامة والبيئة لدى أندلسية	التكلفة غير المباشرة
	مياه الشرب	المعاملات المدرجة في Table 3-9	معمليًا	شاحنات المياه	عدد الشكاوى من العاملين عدد الأمراض المرتبطة بالمياه التي تم الإبلاغ عنها عدم الامتثال لمعايير مياه الشرب	شهريًا	مسؤول الصحة والسلامة والبيئة لدى أندلسية استشاري/معمل مستقل في البيئة والسلامة	3000
	النفايات	فحص مناطق تخزين النفايات	بصريًا	مناطق تخزين النفايات الخطرة وغير الخطرة	التنظيف الجيد فصل النفايات بطريقة صحيحة معدل إعادة تدوير النفايات	يوميًا	مسؤول الصحة والسلامة والبيئة لدى أندلسية	التكلفة غير المباشرة

العنصر	الجانب	المعامل الواجب مراقبته (أي النشاط)	الطريقة	الموقع	مؤشر الأداء الرئيسي (KPI)	معدل التكرار	المسؤولية	التكلفة (بالدولار الأمريكي)
							مسؤول الصحة والسلامة والبيئة لدى المقاول والمقاول من الباطن	
		كمية النفايات الخطرة وغير الخطرة ونوعها وطريقة نقلها وطريقة التخلص منها وقوائم شحنها	فحص الإيصالات/السجلات	المكاتب/الإدارة	كمية النفايات الخطرة وغير الخطرة المتولدة معدل إعادة تدوير النفايات	شهريًا	مسؤول الصحة والسلامة والبيئة لدى أندلسية مسؤول الصحة والسلامة والبيئة لدى المقاول والمقاول من الباطن	التكلفة غير المباشرة
	مياه الصرف الصحي	المعاملات المدرجة في Table 3-10	معمليًا	نقطة تصريف النفايات السائلة	عدد حالات عدم الامتثال	ربع سنوي	مسؤول الصحة والسلامة والبيئة لدى أندلسية مسؤول الصحة والسلامة والبيئة لدى المقاول والمقاول من الباطن	4000
	التربة	دليل على وجود بقع تلوث في التربة	بصريًا	مناطق تخزين النفايات الخطرة مناطق تخزين المواد الخطرة تحت المولدات وحولها	كميات التربة الملوثة عدد حالات انسكاب الكيماويات/الزيوت المُبلَّغ عنها فصل المخلفات بالشكل الملائم سواء الخلفات الخطرة أو غير الخطرة التخزين الصحيح للمواد الخطرة	يوميًا	مسؤول الصحة والسلامة والبيئة لدى أندلسية مسؤول الصحة والسلامة والبيئة لدى المقاول والمقاول من الباطن	التكلفة غير المباشرة
	البيئة البيولوجية (النباتات والحيوانات)	الملاحظة البصرية لأي دليل على وجود أنواع حيوانية	بصريًا	مواقع العمل مساحات الأرض الفارغة داخل الأماكن التابعة	عدد مرات رؤية أنواع حيوانية	يوميًا	مسؤول الصحة والسلامة والبيئة لدى أندلسية مسؤول الصحة والسلامة والبيئة لدى المقاول والمقاول من الباطن	التكلفة غير المباشرة
اجتماعي	الهجرة الداخلية التي يتطلبها المشروع	عدد العاملين وأصولهم	التحقق من بطاقات الهوية	مداخل/بوابات الموقع	شكاوى المجتمعات المحلية بخصوص غياب فرص العمل/التدريب	يوميًا	الأمن لدى شركة أندلسية مسؤول امتثال العمالة لدى أندلسية	التكلفة غير المباشرة
	عمل الأطفال/العمالة القسرية	التفتيش على المقاولين والمقاولين من الباطن	التحقق من بطاقات الهوية بصريًا	مداخل/بوابات الموقع	عدد حالات عمالة الأطفال/العمل القسري	يوميًا		التكلفة غير المباشرة
التراث الثقافي	الاكتشافات وليدة الصدفة	التفتيش أثناء الحفر	بصريًا	جميع أماكن الحفر	عدد الاكتشافات وليدة الصدفة	أثناء أنشطة الحفر	مسؤول الصحة والسلامة والبيئة لدى أندلسية مسؤول الصحة والسلامة والبيئة لدى المقاول والمقاول من الباطن	التكلفة غير المباشرة
إدارة صحة وسلامة	السلامة الكهربائية العاملين	فحص الأجهزة والكابلات والتوصيلات الكهربائية	بصريًا	الأماكن التي تُستخدم فيها معدات/آلات	عدد الحوادث/الإصابات الوشيكة/الإصابات	يوميًا	مسؤول الصحة والسلامة والبيئة لدى أندلسية مسؤول الصحة والسلامة والبيئة لدى المقاول والمقاول من الباطن	التكلفة غير المباشرة

العنصر	الجانب	المعامل الواجب مراقبته (أي النشاط)	الطريقة	الموقع	مؤشر الأداء الرئيسي (KPI)	معدل التكرار	المسؤولية	التكلفة (بالدولار الأمريكي)
	الآلات والسلامة من الأخطار الميكانيكية	فحص جميع المعدات والآلات	بصريًا	الأماكن التي تُستخدم فيها معدات/آلات	عدد الحوادث/الإصابات الوشيكة/الإصابات	يوميًا	مسؤول الصحة والسلامة والبيئة لدى أندلسية مسؤول الصحة والسلامة والبيئة لدى المقاول والمقاول من الباطن	التكلفة غير المباشرة
	المواد الخطرة	فحص منطقة تخزين المواد الخطرة	بصريًا	مناطق تخزين المواد الخطرة	عدد حالات الانسكاب والتسريب	أسبوعيًا	مسؤول الصحة والسلامة والبيئة لدى أندلسية مسؤول الصحة والسلامة والبيئة لدى المقاول والمقاول من الباطن	التكلفة غير المباشرة
	المرور العاملين	فحص المركبات/قواعد المرور	بصريًا	منطقة انتظار سيارات. مواقع العمل	عدد المخالفات المرورية	يوميًا	مسؤول الصحة والسلامة والبيئة لدى أندلسية مسؤول الصحة والسلامة والبيئة لدى المقاول والمقاول من الباطن	التكلفة غير المباشرة
	حالات الانزلاق والتعثر والسقوط	الفحص للكشف عن أخطار التعثر والانزلاق والسقوط في أماكن العمل	بصريًا	مناطق العمل	عدد الحوادث/الإصابات الوشيكة/الإصابات	يوميًا	مسؤول الصحة والسلامة والبيئة لدى أندلسية مسؤول الصحة والسلامة والبيئة لدى المقاول والمقاول من الباطن	التكلفة غير المباشرة
	المناولة اليدوية	التفتيش على الأنشطة اليدوية	بصريًا	المناطق التي يلزم فيها إجراء أعمال رفع	عدد الحوادث/الإصابات الوشيكة/الإصابات	يوميًا	مسؤول الصحة والسلامة والبيئة لدى أندلسية مسؤول الصحة والسلامة والبيئة لدى المقاول والمقاول من الباطن	التكلفة غير المباشرة
صحة وسلامة المجتمع	المرور	توصيل المواد	بصريًا سجلات التوصيل	مواقع الإنشاء	عدد الحوادث المبلغ عنها عدد الشكاوى من السكان المحليين بخصوص الاختناق المروري بسبب المشروع	شهريًا	مسؤول الصحة والسلامة والبيئة لدى أندلسية مسؤول الصحة والسلامة والبيئة لدى المقاول والمقاول من الباطن	التكلفة غير المباشرة
	الأمن	فحص المواد، المعدات فحص بطاقات الهوية الخاصة بالعاملين	بصريًا السجلات	مداخل/مخارج الموقع مواقع الإنشاء	عدد حوادث السرقة/العبث في الممتلكات	يوميًا	الأمن لدى شركة أندلسية	التكلفة غير المباشرة

في مرحلة التشغيل:

العنصر	الجانب	المعامل الواجب مراقبته (أي النشاط)	الطريقة	الموقع	مؤشر الأداء الرئيسي (KPI)	معدل التكرار	المسؤولية	التكلفة (بالدولار الأمريكي)

البيئة	الهواء الداخلي	يتم تحديده بناءً على المواد الكيميائية المستخدمة في المعمل وفقًا للمعاملات المدرجة في القانون 1994/4، اللائحة التنفيذية رقم 1095، الملحق 8، الجدول 1	باستخدام أداة/معمليًا	داخل المعامل الكيميائية	عدد الشكاوى من العاملين/المرضى/الزوار عدد الحوادث/الأمراض الناتجة عن المواد الكيميائية التوافق مع القانون 1994/4	سنويًا	مسؤول الصحة والسلامة والبيئة لدى أندلسية	2000
	الضوضاء	المعاملات المدرجة في Table 3-7	باستخدام أداة/معمليًا	داخل الورش	عدد الشكاوى من العاملين/المرضى/الزوار التوافق مع القانون 1994/4	مرة واحدة سنويًا لتحديد مستويات الضوضاء أثناء أنشطة المستشفى المعتادة	مسؤول الصحة والسلامة والبيئة لدى أندلسية	2000
	النفايات	فحص مناطق تخزين النفايات	بصريًا	مناطق تخزين النفايات الخطرة وغير الخطرة	التنظيف الجيد فصل النفايات بطريقة صحيحة معدل إعادة تدوير النفايات	يوميًا	مسؤول الصحة والسلامة والبيئة لدى أندلسية مسؤول الصحة والسلامة والبيئة لدى المقاول والمقاول من الباطن	التكلفة غير المباشرة
		كمية النفايات الخطرة وغير الخطرة ونوعها وطريقة نقلها وطريقة التخلص منها وقوائم شحنها	فحص الإيصالات/السجلات	المكاتب/الإدارة	كمية النفايات الخطرة وغير الخطرة المتولدة معدل إعادة تدوير النفايات	شهريًا	مسؤول الصحة والسلامة والبيئة لدى أندلسية مسؤول الصحة والسلامة والبيئة لدى المقاول والمقاول من الباطن	التكلفة غير المباشرة
	مياه الصرف الصحي	المعاملات المدرجة في Table 3-10	معمليًا	نقطة تصريف النفايات السائلة	عدد حالات عدم الامتثال	سنويًا	مسؤول الصحة والسلامة والبيئة لدى أندلسية مسؤول الصحة والسلامة والبيئة لدى المقاول والمقاول من الباطن	200
الوضع الاجتماعي والاقتصادي	ظروف العمالة ورفاه المجتمع	المناقشات مع الجيران	استبيان	المناطق السكنية القريبة من الموقع	عدد الشكاوى من العاملين عدد الشكاوى من أفراد المجتمع	شهريًا	مسؤول امتثال العمالة لدى أندلسية	التكلفة غير المباشرة
	التمييز والعنف على أساس الجنس	المناقشات مع العاملين/المرضى/الزوار المتضررين	استبيان	داخل حدود المشروع	عدد الحوادث المبلغ عنها	شهريًا	مسؤول امتثال العمالة لدى أندلسية	التكلفة غير المباشرة
إدارة صحة وسلامة	الإصابات والعداوى والأمراض	فحص جميع المعدات/المواد التي يُحتمل أن تسبب إصابة أو تنشر الأمراض	بصريًا	داخل حدود المشروع	عدد الحالات المرصودة عدد الحوادث	أسبوعيًا	مسؤول الصحة والسلامة والبيئة لدى أندلسية مسؤول الصحة والسلامة والبيئة لدى المقاول والمقاول من الباطن	التكلفة غير المباشرة
	السلامة الكهربائية العاملين	فحص الأجهزة والكابلات والتوصيلات الكهربائية	بصريًا	الأماكن التي تُستخدم فيها معدات/آلات	عدد الحوادث/الإصابات الوشيكة/الإصابات	يوميًا	مسؤول الصحة والسلامة والبيئة لدى أندلسية	التكلفة غير المباشرة

							مسؤول الصحة والسلامة والبيئة لدى المقاول والمقاول من الباطن	
	المواد الخطرة	فحص منطقة تخزين المواد الخطرة	بصريًا	مناطق تخزين المواد الخطرة	عدد حالات الانسكاب والتسريب	أسبوعيًا	مسؤول الصحة والسلامة والبيئة لدى أندلسية مسؤول الصحة والسلامة والبيئة لدى المقاول والمقاول من الباطن	التكلفة غير المباشرة
صحة وسلامة المجتمع	المرور والاحتفانات	بصريًا	بصريًا السجلات	الشارع الموجود به الموقع	عدد الحالات المرصودة عدد الشكاوى من العاملين/أفراد المجتمع	يوميًا	مسؤول الصحة والسلامة والبيئة لدى أندلسية مسؤول الصحة والسلامة والبيئة لدى المقاول والمقاول من الباطن	التكلفة غير المباشرة
	فحص المواد، المعدات فحص بطاقات هوية الموظفين/المرضى	بصريًا	بصريًا السجلات	المداخل/المخارج	عدد حوادث السرقة/العبث في الممتلكات	يوميًا	الأمن لدى شركة أندلسية	التكلفة غير المباشرة

تكاليف خطة الإدارة البيئية والاجتماعية

العنصر	التكلفة (بالدولار الأمريكي)
توظيف موظفي الصحة والسلامة والبيئة ومسؤول امتثال العمالة	40,000
تدابير التخفيف البيئية والاجتماعية	19,000
المراقبة البيئية والاجتماعية	22,200
خطط الإدارة البيئية والاجتماعية	9,900
تطبيق ومراقبة آلية الشكاوى	3,000
التدريب	10,000
تدقيق E&S من العام الثاني لبدء المشروع	5,000
الإجمالي	**109,100**

العنصر		الأثر المحتمل	تدابير التخفيف/الإدارة	فنة الأثر	خطورة الأثر قبل التخفيف	الأثر المتبقي بعد التخفيف	المسؤولية	الإطار الزمني	التكلفة المرتبطة (بالدولار الأمريكي)[3]
البيئة	نوعية الهواء	انخفاض نوعية الهواء	• إعداد خطة لإدارة نوعية الهواء في الأماكن الداخلية وإجراء فحص وصيانة للمركبات • اتباع تعليمات المُصنِّع/المُورد بدقة • ضمان إتاحة صحيفة بيانات سلامة المواد الخاصة بجميع المواد الكيميائية ومشاركتها مع الموظفين/العاملين المسؤولين عنها • التأكد من وجود تهوية مناسبة في جميع الأماكن (نشطة أو سلبية) • الحد من فترة التعرض و/أو وقت استخدام الأدوات/الأنشطة المولدة للغبار أو الأبخرة • توفير أقنعة تنفس للاستخدام في حالة وجود غبار أو أبخرة ضارة • التأكد من صيانة جميع الآلات والمعدات والأدوات بانتظام • إيقاف تشغيل أي آلات أو معدات أو أدوات غير مستخدمة	مباشر	متوسط	ثانوي	مسؤول الصحة والسلامة والبيئة لدى أندلسية	أثناء التشغيل	متضمنة في الميزانية
	الضوضاء	فقدان السمع، الطنين، فقدان التركيز الناتج عن الضوضاء	• يجب وضع لافتات واضحة على جميع المناطق التي يُجرى فيها أنشطة تبعث ضوضاء عالية • يجب ارتداء وسائل حماية الأذن في جميع الأوقات خلال الأنشطة التي تنبعث منها ضوضاء عالية • تطبيق تقنيات التحكم في المصدر لتقليل الضوضاء، مثل تقليل سرعة الأجزاء المتحركة، وتقليل الاحتكاك، • يجب القيام بالأنشطة الدورانية لتقليل وقت تعريض الموظفين والمرضى لأنشطة تنبعث منها ضوضاء عالية • يجب صيانة جميع المعدات بانتظام من أجل رفع كفاءة التشغيل • عند الاقتضاء، تركيب منصات مطاطية لتقليل انبعاثات الضوضاء الناتجة عن الاهتزازات • اختبار المعدات المزودة بكواتم للصوت	مباشر	متوسط	ثانوي	مسؤول الصحة والسلامة والبيئة لدى أندلسية استشاري مستقل في البيئة والسلامة	أثناء التشغيل	متضمنة في الميزانية
	الماء	انخفاض إمدادات المياه للمجتمعات/الضغط على شبكة المياه	• إطلاق حملة بشأن كفاءة الموارد في جميع أنحاء المستشفى (لافتات، ندوات، إلخ.) • التأكد من أن أنشطة الغسيل/التنظيف (مثل غسل الماكينات إلخ) تُجرى وفقًا لطرق لا تتطلب سوى استهلاك منخفض من الماء أو استخدام التنظيف الجاف إذا أمكن • زيادة "المسطحات الخضراء الجافة" (البستنة الجافة) في الموقع وتقليل العشب كثيف المياه • استخدام تقنيات الري بالتنقيط • استخدام النباتات التي لا تتطلب كميات كبيرة من الماء لتنمو • استخدام تجهيزات كفؤ من حيث استخدام الموارد	مباشر	ثانوي	ثانوي	مسؤول الصحة والسلامة والبيئة لدى أندلسية	أثناء التشغيل	2000 ومتضمنة في عقد الهندسة والتوريد والإنشاء (للعشب الصناعي)
	النفايات	تلوث التربة/الضغط على مكبات النفايات	**<u>النفايات غير الخطرة</u>** • إعداد حملات للتوعية بإدارة النفايات في جميع أنحاء المستشفى (لافتات، ندوات، رسائل إخبارية، إلخ.) • توزيع أوعية النفايات المشفرة بالألوان في جميع أنحاء المستشفى والتأكد من وضع ملصقات عليها بالمراجع الفوتوغرافية / البصرية • إنشاء منطقة لتخزين النفايات في الموقع حيث تتوفر صناديق نفايات كبيرة لكل نوع من النفايات • إفراغ صناديق النفايات في منطقة إلقاء النفايات الرئيسية بشكل يومي • تدريب جميع عمال الصيانة على فصل النفايات ومدهم بالمعلومات اللازمة • تحديد شركات إعادة التدوير التي يمكنها شراء أنواع مختلفة من النفايات القابلة لإعادة التدوير الناتجة • يجب توفير صناديق نفايات مختلفة لمجاري النفايات المختلفة من أجل ضمان فصل النفايات بشكل صحيح • يجب إزالة كل النفايات غير القابلة للتدوير من الموقع يوميًا والتخلص منها في منشأة مسجلة أو مرخصة للتخلص من النفايات بواسطة جهة مُرخصة.	مباشر	متوسط	ثانوي	مسؤول الصحة والسلامة والبيئة لدى أندلسية	أثناء التشغيل	4000

			• يجب تقديم سجلات التخلص المناسب إلى مجموعة أندلسية بصورة شهرية. يُحظر ترك حاويات النفايات أو تخزينها في الموقع تحت أي ظروف **<u>النفايات الخطرة</u>** • إنشاء منطقة لتخزين النفايات الخطرة بموجب القانون 1994/4 • يحظر خلط النفايات الخطرة أو جمعها مع النفايات العامة التي من المحدد التخلص منها في أحد مواقع المكبات المحلية • يجب التخلص من النفايات الخطرة باستخدام أساليب مناسبة للحالة وفقًا لخطة إدارة النفايات. يجب على مدير الصحة والسلامة والبيئة تحديد موقع معتمد للتخلص من النفايات ومعالجتها. • يجب وضع علامات واضحة على صناديق النفايات الخطرة وتخزينها في مساحة مغلقة (أو فوق سطح غير منفذ) وتغطيتها بغطاء • يجب إزالة كل النفايات الخطرة من الموقع بصورة شهرية والتخلص منها في منشأة مسجلة أو مرخصة للتخلص من النفايات الخطرة. يجب تقديم سجلات شهادات التخلص من النفايات الخطرة المناسبة إلى مجموعة أندلسية عند إزالة النفايات الخطرة للتخلص منها خارج الموقع					
	مياه الصرف الصحي	المخاطر الصحية على المرضى والموظفين	• عرض قواعد التعامل مع مياه الصرف بوضوح، بما في ذلك التخلص من النفايات السائلة • توزيع أوعية النفايات السائلة المشفرة بالألوان داخل جميع المناطق المولدة لمياه الصرف الملوثة وتأكد من أنها تحمل علامات مرجعية فوتوغرافية/بصرية • التأكد من أن جميع النفايات السائلة يتم جمعها بشكل يومي وتخزينها في منطقة تخزين النفايات الخطرة المحددة • يجب تقديم سجلات التخلص المناسب إلى مجموعة أندلسية بصورة شهرية • فحص البنية التحتية لمياه الصرف بانتظام (المصارف، خطوط الأنابيب، فتحات المجاري، إلخ.)	مباشر	متوسط	ثانوي	مسؤول الصحة والسلامة والبيئة لدى أندلسية	أثناء التشغيل	2000
	الطاقة	انبعاثات غازات الدفيئة - ظاهرة الاحتباس الحراري	• دراسة التصاميم السلبية للتبريد والتدفئة والإضاءة في جميع المباني • تركيب إضاءة موفرة للطاقة • النظر في تصميم أنظمة للتهوية الطبيعية • تثبيت أجهزة لاستشعار الحركة للإضاءة • التأكد من عزل المباني جيدًا لتجنب هروب الهواء الساخن و/أو البارد حسب الموسم • التأكد من استخدام جميع المعدات والآلات عند الحاجة فقط • تركيب مخففات حيثما أمكن • فصل المعدات التي تتطلب طاقة عالية عندما لا تكون قيد الاستخدام • إغلاق أجهزة الكمبيوتر والطابعات وجميع الأجهزة الأخرى في نهاية اليوم • استخدام مؤقتات لأنظمة التكييف والتهوية • تركيب عدادات الطاقة لمراقبة الاستهلاك	مباشر	بالغ	متوسط	مسؤول الصحة والسلامة والبيئة لدى أندلسية	أثناء التشغيل	متضمنة في الميزانية وعقد EPC
الوضع الاجتماعي والاقتصادي	ظروف العمالة ورفاه المجتمع	سوء علاقات الموظفين واستغلال العمال ضعف المشاركة المجتمعية مما يثير الاستياء نحو المشروع	• إنشاء مرافق رعاية (أي مناطق جلوس أو مناطق ترفيهية، إلخ) للموظفين والمرضى والزائرين • تقديم برامج تدريبية في التواصل والسلوك • إطلاق حملات توعية حول سياسة الموارد البشرية/مدونة قواعد السلوك الخاصة بالمشروع • إعداد آلية لإدارة مظالم العاملين تسمح بالإبلاغ عن شكاواهم دون الخوف من العقاب • إعداد خطة إشراك أصحاب المصلحة (SEP) التي تحدد أصحاب المصلحة الأساسيين والمعلومات التي ستتم مشاركتها معهم وقنوات الاتصال المناسبة	مباشر	متوسط	ثانوي	مسؤول الصحة والسلامة والبيئة لدى أندلسية	أثناء التشغيل	4000

[3] تدابير التخفيف/الإدارة المحددة **بخط عريض** سيتم تمويلها عن طريق الميزانية المخصصة لخطة الإدارة البيئية والاجتماعية.

			• وضع آلية للتظلم المجتمعي تسمح لأفراد المجتمع بالتقدم بشكاواهم وتظلماتهم، والسماح بمعالجة التظلمات في الوقت المناسب							
	التمييز والعنف على أساس الجنس	الضغط النفسي والعاطفي والجسدي	• إعداد سياسة بشأن العنف والتمييز على أساس الجنس وتوزيعها • وضع تدابير عقابية لمعالجة حالات العنف والتمييز على أساس الجنس • تقديم خدمات المشورة لضحايا العنف والتمييز على أساس الجنس • رفع الوعي بالمشكلة وآثارها • تأسيس آلية تظلم بإجراءات معينة للتعامل مع الشكاوى المتعلقة بالعنف والتمييز على أساس الجنس • تقديم برامج الوقاية كجزء من المناهج الدراسية التي تركز على حل النزاعات، والعمل الجماعي، وحل المشكلات	مباشر	متوسط	ثانوي	مسؤول الصحة والسلامة والبيئة لدى أندلسية	أثناء التشغيل	متضمنة في الميزانية
الصحة والسلامة	الإصابات والعداوى والأمراض	الإصابات والعداوى والأمراض	• تحديد إجراء لمكافحة العدوى خاص بالمشروع لتحديد المسؤوليات والموارد وتدابير الإدارة/التخفيف لمخاطر العدوى المحتملة داخل المشروع • التأكد من أن الموظفين ذوي الخبرة والمؤهلين هم فقط من يتولون الإشراف على استخدام جميع المعدات والآلات • تأكد من تقييد الوصول إلى المناطق عالية الخطورة مثل أجهزة التصوير • لا يُسمح لأي عامل بتشغيل أي معدات و/أو آلة دون التدريب/التوجيه المناسب والإذن الكتابي بالمتابعة من قبل الفني المسؤول • صيانة المعدات والآلات بانتظام • ينبغي إكمال تقييمات المخاطر وتدابير السيطرة كجزء من المشروع بما في ذلك مخاطر الإصابة أو العدوى • يجب تنظيف وتعقيم جميع المساحات والأسطح بصورة متكررة وفقًا لجدول زمني محدد مسبقًا • لن يُسمح إلا للمرضى المُحالين بدخول غرفة الأشعة السينية • سيوزع قسم الأشعة السينية معدات وقاية شخصية على العاملين والمرضى • إعداد حملات توعية (لافتات، دورات تدريبية) بشأن السلامة من العدوى والإشعاع • تطبيق تدابير التخفيف نفسها للتعامل مع النفايات أثناء مرحلة التشغيل	مباشر	متوسط	ثانوي	مسؤول الصحة والسلامة والبيئة لدى أندلسية	أثناء التشغيل	متضمنة في الميزانية
	الأخطار الكهربائية	الصعق بالكهرباء والصدمة والحروق	• التأكد من أن الفنيين ذوي الخبرة والمؤهلين هم فقط من يتولون الإشراف على استخدام جميع المعدات والآلات • التأكد من تقييد الوصول إلى اللوحات الكهربائية • لا يُسمح لأي عامل بتشغيل أي معدات و/أو آلة دون التدريب/التوجيه المناسب والإذن الكتابي بالمتابعة من قبل الفني المسؤول • يُحظر تخزين و/أو استعمال أي سوائل بالقرب من المعدات الكهربائية • تركيب أجهزة قاطعة للخطأ الأرضي • صيانة المعدات والآلات بانتظام • ينبغي استكمال تقييمات المخاطر وتدابير السيطرة كجزء من المشروع الذي يشمل الأعمال الكهربائية والأنظمة الآمنة لشهادات العمل الصادرة لجميع المعدات والآلات • يحظر عمل أي شخص بمفرده على المعدات الكهربائية، يجب أن يكون هناك شخص آخر على الأقل في مكان قريب • إعداد وعرض إرشادات واضحة حول كيفية إدارة الأخطار الكهربائية وكيفية التعامل مع شخص قد تلامس مع مصدر كهربائي • تدابير التخفيف المطبقة لمرحلة الإنشاء	مباشر	متوسط	ثانوي	مسؤول الصحة والسلامة والبيئة لدى أندلسية	أثناء التشغيل	متضمنة في الميزانية

	المواد الخطرة	تهيج الجلد والعين والرئة	• وضع إجراءات لإدارة المواد الخطرة • إعداد نموذج إطلاق للمواد الخطرة السائلة/الصلبة لتتبع الكميات المستخدمة وضمان التخلص السليم/الأمن منها • الاحتفاظ بصحيفة بيانات سلامة المواد لجميع المواد الخطرة • تخصيص أماكن معينة للمواد الخطرة الصلبة/السائلة وتقييد الوصول لها • تجنب الإفراط في استخدام المواد الخطرة • التأكد من ارتداء جميع مستخدمي المواد الخطرة/العمال الذين يتعاملون معها لمعدات الوقاية الشخصية المناسبة • وضع إجراءات خاصة بكيفية التعامل مع انسكاب المواد الكيميائية وعرضها في لافتات • توفير أدوات التعامل مع الانسكابات وطفايات الحريق وأدوات الإسعافات الأولية للتعامل مع أي انسكاب • التأكد من تثبيت جميع أسطوانات الغاز بصورة صحيحة في مكان محمي جيد التهوية بعيدًا عن الحرارة والشمس • التأكد من دعم أسطوانات الغاز (ممتلئة أو فارغة) ووضعها في وضع قائم في جميع الأوقات. • تدابير التخفيف المطبقة لمرحلة الإنشاء	مباشر	متوسط	ثانوي			4000
	كوفيد-19	حالات كوفيد-19 وتفشيه	• ارتداء كمامة للوجه والتباعد البدني عن الآخرين بمسافة 1.5 متر على الأقل. • تجنب المصافحة باليدين. • غسل اليدين جيدًا بشكل منتظم باستخدام الماء والصابون أو تنظيف اليدين باستخدام معقم يدين ذي أساس كحولي وفقًا لتوصيات منظمة الصحة العالمية (WHO). • اتباع نظافة تنفسية جيدة. ويعني ذلك تغطية الفم والأنف باستخدام المرفق المثني أو المنديل عند السعال أو العطس. • تجنب لمس العينين والأنف والفم. • تنظيف وتطهير الأجسام والأسطح المتعرضة للمس المتكرر. • إبلاغ المشرف أو المدير عند شعور أحد العاملين بالمرض، وخصوصًا في حالة الإصابة بحمى و/أو سعال و/أو صعوبة في التنفس. • التأكد من تطعيم جميع العاملين ضد فيروس كوفيد-19 قبل التعيين. تتيح وزارة الصحة اللقاحات كذلك وتوفرها مجانًا.	مباشر/غير مباشر	بالغ	متوسط	مسؤول الصحة والسلامة والبيئة لدى أندلسية مسؤول السلامة والصحة والبيئة لدى المقاول	أثناء التشغيل	متضمنة في الميزانية
صحة وسلامة المجتمع	المرور	حوادث المرور	• وضع خطة لإدارة المرور أثناء مرحلة التشغيل • الحرص على اتباع جميع المركبات/الشاحنات لقواعد المرور • يقتصر نقل المواد إلى موقع المشروع على ساعات العمل بالنهار فقط • تجنب إيصال المواد في ساعات الذروة حتى لا يتفاقم الاختناق المروري • تنظيم مواعيد وصول حافلات العاملين ومغادرتها لتجنب الاختناق المروري • الحرص على تلقي جميع السائقين التدريب المناسب	غير مباشر	متوسط	ثانوي	مسؤول الصحة والسلامة والبيئة لدى أندلسية مسؤول السلامة والصحة والبيئة لدى المقاول	أثناء التشغيل	متضمنة في الميزانية
	الأمن	سرقة المعدات/الآلات إصابات للمجتمعات التعدي على ممتلكات الغير	• تدريب رجال الأمن على عمل دوريات بانتظام في الموقع • تفقد الهوية الشخصية لجميع الأفراد عند دخول الموقع للتأكد من أنهم مرضى أو موظفون أو عمال • وضع سجلات زوار في جميع المداخل والمخارج • الحرص على تخزين المعدات بأمان والحد من إمكانية الوصول إليها	غير مباشر					متضمنة في الميزانية

ABBREVIATIONS

Abbreviation	Definition
AG	Andalusia Group
AfDB	African Development Bank
AMH	Andalusia Maadi Hospital
BID	Background Information Document
CAA	Competent Administrative Authority
CAPMAS	Central Agency for Public Mobilization and Statistics
CLO	Community Liaison Officer
DHA	Directorate of Health Affairs
EEAA	Egyptian Environmental Affairs Agency
EMU	Environmental Management Unit
EIA	Environmental Impact Assessment
EPC	Engineering, Procurement and Construction
E&S	Environmental and Social
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
GBV	Gender-Based Violence
GOE	Government of Egypt
GRM	Grievance Redress Mechanism
HAIs	Healthcare-Associated Infections
IFI	International Financial Institution
LCO	Labour Compliance Officer
MBGL	Meters Below Ground Level
MI	Ministry of Interior
MIIC	Ministry of Investment and International Cooperation
MOEE	Ministry of Energy and Electricity
MOH	Ministry of Health
MSDS	Material Safety Data Sheet
NUCA	New Urban Communities Authority
NGO	Non-Governmental Organization
OHS	Occupational Health and Safety
OS	AfDB Operational Safeguard
PPE	Personal Protective Equipment

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1 NON-TECHNICAL SUMMARY

1.1 Background

The Egyptian health-care system faces numerous obstacles in enhancing and ensuring the Egyptian people's health and well-being. Not only does the system have to deal with diseases linked to poverty and a lack of education, but it also has to deal with new diseases and illnesses linked to modern, urban lifestyles. The population's demands for more and better treatment, as well as advanced health care technologies, are rising as global communications and commerce become more accessible.

The demographic burden on Egypt's health system is increasing due to a high birth rate mixed with a longer life expectancy. With approximately 100 million people living within its boundaries and another 10 million residing abroad, Egypt is one of the most populated Arab countries in the world. With a population growth rate of 2.5 percent per year, demand for physical and social infrastructure, such as healthcare and education, is on the rise. Egypt's healthcare sector's long-term success will be determined by how rapidly it accepts new technology and innovations based on global research and development (R&D) and adopts a data-driven, patient-centric, and results-oriented approach to the industry.

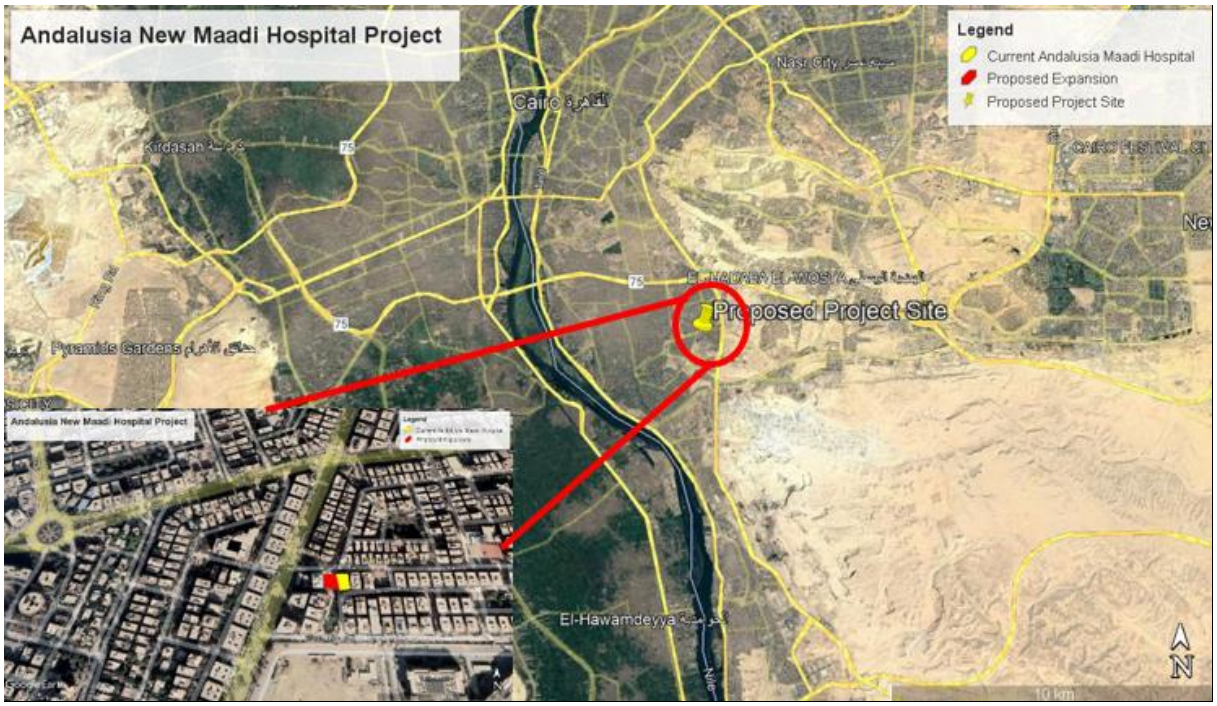
It is estimated that by 2030, Egypt will require approximately 38,000 new beds (based on Egypt's ratio of 1.3 beds/1,000 population) with an estimated investment of US$8 to 13 billion, and up to 120,000 new beds (based on the MENA ratio of 1.9 beds/1,000 population) with an estimated investment of US$25 to 40 billion, with the public sector funding half of these investments. The investment needed to close this gap was calculated based on the current cost of construction with fitouts for a Grade A hospital, which is in the range of US$ 1,500/sqm to US$ 2,000/sqm (average US$1,750/sqm), while the gross area per bed ranges from 90 sqm to 120 sqm (average 115 sqm), with investment in medical fitouts ranging from US$80,000 to US$100,000 per bed. Furthermore, since “Doctor’s Clinics” are one of the popular services in Egypt, it is estimated that the country will require approximately two million square metres of medical clinic space by 2030, at a cost of US$1 billion, providing opportunities for developers to develop and sell clinics to doctors/investors[4].

There is a clear gap in the Egyptian healthcare sector and the Project will contribute towards bridging this gap. The Project will bring new technology and expertise to provide world-class health care and medical services for the community. Not only will the hospital provide in-patient care, but it will also include out-patient clinics, serving both deficiencies highlighted by Colliers report.

The African Development Bank (AfDB) is considering providing an investment loan to support the enhancement of the Egyptian healthcare sector through supporting Andalusia Group (later referred to as the “Developer”, “Andalusia”), for the establishment of a first-class hospital at the Maadi district in Cairo, Egypt (later referred to as the “Project”). The location of the Project is shown in the figure below.

[4] The information presented in the section was obtained from Colliers Egypt Healthcare Overview: Research and Forecast Report 2021/2022, accessed at: https://www.colliers.com/en-eg/research/cairo/egypt-healthcare-overview

Figure 1-1: Proposed Project Site



1.2 Environmental and Social Impact Assessment Process

Law 4/1994 and its amendments, also known as the Law on Protection of the Environment, and its executive regulations require Environmental Impact Assessments (ESIAs) for new projects and expansions as well as renovations of existing projects.

This law classifies projects into three categories based on different levels of EIA requirements according to severity of possible environmental impacts and location of the establishment and its proximity to residential settlements:

- Category (A): Projects with minimum environmental impacts. These are required to complete an environmental impact assessment form A;
- Category (B): Projects with potential adverse environmental impacts yet less adverse than Category C. These are required to complete an environmental impact assessment form B; and
- Category (C): Projects which have highly adverse impacts, and which are required to have a full, detailed EIA study.

In accordance with Law No. 4 of 1994, the Project is considered to be categorised as a Category Scope B Project. According to the Egyptian Environmental Affairs Agency's (EEAA) Guidelines of Principles and Procedures for EIA (2nd Edition - January 2009), a Category B EIA should include the following information:

- Indicate Name of Parties Preparing the Form
- Project Description
- Laws and Regulations
- Baseline Description (physical, biological, social)
- Assessment of Impacts
- Analysis of Alternatives
- Environmental Management Plan (EMP)

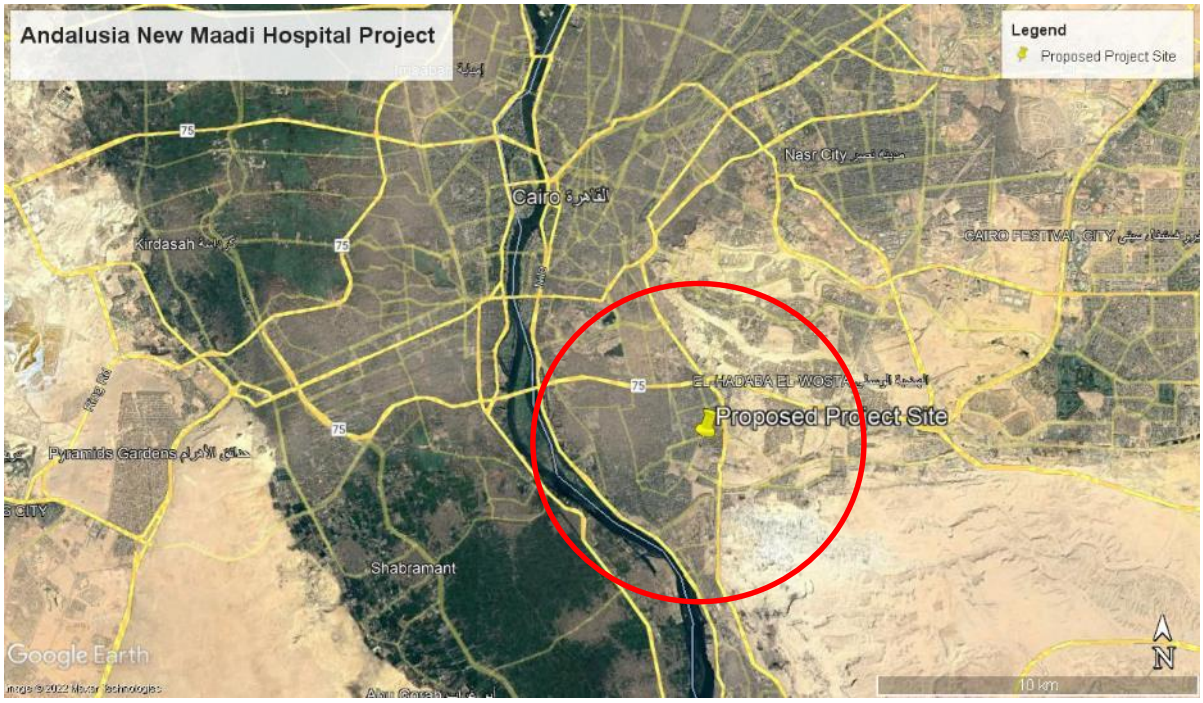
An explanation of the approval process is presented in Section 2.1.

AfDB's Operational Safeguard (OS) 1 "Environmental and Social Assessment" requires that all projects financed by the Bank conduct and environmental and social impact assessment to determine the project's environmental and social category and the resulting environmental and social assessment requirements. Based on AfDB's OS 1, the project is considered to be categorized as a Category 2 Project, which is defined as a project that is "likely to have detrimental site-specific environmental and/or social impacts that are less adverse than those of Category 1 projects." Category 2 projects also require the preparation of an Environmental and Social Management Plan (ESMP), which is to be prepared in a separate document than that of the ESIA (please see Section 5 below).

1.3 Overview of the Project

The Project is located in the Maadi district in Cairo, Egypt at the following coordinates: 29° 58' 24.3" N and 31° 16' 53.6" E. The construction phase of the Project is anticipated to begin in August 2022 and last for 10 months. The Project is scheduled to begin operations in 2024. The Project location is present in Figure 5-1.

Figure 1-2: Project Location (obtained from Google Earth, accessed on May 12th 2022)



1.4 Institutional and Legal Framework

Egyptian Environmental Legal and Institutional Framework

Law 4/1994 and its amendments, also known as the Law on Protection of the Environment, and its executive regulations require Environmental and Social Impact Assessments (ESIAs) for new projects and expansions as well as renovations of existing projects. The CAAs for EIAs in Egypt are sectorial Ministries and Governorates (in this case MHP), given the fact that they possess the executive powers in relation to development authorization. Moreover, the CAAs are required by Law 4 to conduct the screening of projects, while the Central EIA Department of the Egyptian Environmental Affairs Agency (EEAA) is in charge of supervising the screening process, managing the review of ESIA reports, making decisions on the acceptability of EIA reports, and giving an opinion on the development and proposals for mitigating measures.

The following is a brief description of the different national authorities and institutions of relevance to this project (EEAA, EMU, and CAA).

The EEAA is an authorized state body regulating environmental management issues. The three main roles of the EEAA defined by Egyptian Laws are as follows:

- Regulatory and coordinating role in most activities, as well as an executive role restricted to the management of natural protectorates and pilot projects.
- The agency is responsible for formulating the environmental management policy framework, setting the required action plans to protect the environment. Following-up their execution in coordination with CAAs; EEAA is responsible for reviewing and approving ESIAs.
- It imposes administrative fees for reviewing ESIA studies and issuing environmental permits.

The Environmental Management Unit (EMU) at the Governorate and district level is responsible for the environmental performance of all projects/facilities within the Governorate's premises. The Governorate usually establishes environmental management units at both the Governorate and city/district level. The EMU is responsible for the protection of the environment within the Governorate's boundaries and thus is mandated to undertake both environmental planning and operation-oriented activities. The environmental management unit is mandated to:

- Follow-up on the environmental performance of the projects within the Governorate during both construction and operations to ensure the Project abides by laws and regulations as well as mitigation measures included in its EIA approval. Investigate any environmental complaint filed against projects within the Governorate
- The EMU is administratively affiliated to the Governorate yet technically to the EEAA. The EMUs submit monthly reports to the EEAA with their achievements and inspection results
- The Governorate has a solid waste management unit at the Governorate and district level. The units are responsible for the supervision of solid waste management contracts.

The CAA for medical facilities is MHP. Law 4/1994 stipulates that applications for a license from an individual, company, organization or authority, subject to certain conditions, require an assessment of the expected environmental impacts.

The CAAs are the entities responsible for issuing licenses for project construction and operation. The ESIA is considered one of the prerequisites for licensing. The CAAs are thus responsible for receiving the ESIA forms of studies, reviewing the information contained within these studies, including the location, suitability of the location to the project activity and ensure that the activity carried out within the Project does not pose any significant negative impacts on the surroundings and that the location does not show any conflicts with the ministerial decrees related to the activity. The CAA forwards the documents to EEAA for review. They are the main interface with the Project proponents in the ESIA system. The CAA is mandated to:

- Provide technical assistance to project proponents such as examine the illustrative ESIA lists to identify the category of the Project, consult with EEAA in case the Project is not included in the ESIA indicative lists, using the criteria described in section 5 of the EIA guidelines to identify the category of the Project. EEAA will have the final decision regarding the classification and should inform the project proponent of its opinion in writing. The CAA also provides the project proponent with ESIA forms for Category A or B; and advises the project proponent regarding the requirements of the form, as well as addressing any questions put forward by the project proponents;
- Ensures the approval of the proposed Project site;
- Receive the ESIA study and forward it to EEAA; and
- Follow-up on the implementation of the environmental and social management plan (ESMP) within the ESIA during construction (before issuing the operation license) and implementation.

After submission of an ESIA for review, EEAA may request revisions in the ESIA report within 30 days, including additional mitigation measures, before issuing the approval of the report. The Project proponent will have the right to issue an appeal within 30 days from its receipt of the EEAA's decision. It should be noted that once the ESIA has been approved, the ESMP as will be presented in the report, will be considered an integral part of the Project;

the Project proponent then will be legally responsible for the implementation of that plan, depending on their involvement in construction or operation. It is therefore worth mentioning that the project proponent must ensure that all mitigation measures and environmental requirements described in the ESMP have been clearly referred to in the tender documents for the construction works and construction contracts. The project proponent is responsible for ensuring the contractors implement the ESMP during the construction (or demolition and renovation) and operation phases. Figure 3-1 below presents the process for submitting an ESIA.

Egyptian Labour and Working Conditions Legal Framework

The labour legal framework in Egypt comprises an extensive series of laws and decrees that protect and safeguard workers' rights and including the following articles of Egypt's Labour Law 12/2003, details of which will be included in the ESIA report:

- Article 34 of Law 12/2003
- Article 54 of Law 12/2003
- Article 85 of Law 12/2003
- Article 120 of Law 12/2003

The protection of children is governed by Law 12/1996.

Egyptian Occupational Health and Safety (OHS) Legal Framework

Occupational Health and Safety in Egypt is regulated under Law 12/2003. Its revised version issued and published in the Official Gazette No. 14 (rep.) on 7th April 2003, entered into force on the 7th of July 2003.

Egyptian Traffic Management Legal Framework

Traffic Law 66/1973, amended by Law 121/2008, deals with traffic planning during construction of projects.

African Development Bank Operational Safeguards

The AfDB has five Operational Safeguards (OSs) forming its Integrated Safeguards System.

AfDB Operational Safeguard	Objectives	Applicable to the Project (Y/N)
Operational Safeguard 1 – Environmental and Social Assessment	• Mainstream environmental, climate change, and social considerations into Country Strategy Papers (CSPs) and Regional Integration Strategy Papers (RISPs); • Identify and assess the environmental and social impacts and risks— including those related to gender, climate change and vulnerability—of Bank lending and grant-financed operations in their areas of influence; • Avoid or, if avoidance is not possible, minimise, mitigate and compensate for adverse impacts on the environment and on affected communities; • Provide for stakeholders' participation during the consultation process so that affected communities and stakeholders have timely access to information in suitable forms about Bank operations, and are consulted meaningfully about issues that may affect them; • Ensure the effective management of environmental and social risks in projects during and after implementation; and • Contribute to strengthening regional member country (RMC) systems for environmental and social risk management by assessing and building their capacity to meet AfDB requirements set out in the Integrated Safeguards System (ISS)	**Applicable** • Project is Category 2 and requires the completion of an ESIA and preparation of ESMP
Operational Safeguard 2 – Involuntary Resettlement: Land Acquisition, Population Displacement and Compensation	• Avoid involuntary resettlement where feasible, or minimise resettlement impacts where involuntary resettlement is deemed unavoidable after all alternative project designs have been explored;	**Not applicable** • The Project will not result in the loss of lands, neither resettlement of population or land acquisition. The Project

AfDB Operational Safeguard	Objectives	Applicable to the Project (Y/N)
	• Ensure that displaced people are meaningfully consulted and given opportunities to participate in the planning and implementation of resettlement programmes; • Ensure that displaced people receive significant resettlement assistance under the project, so that their standards of living, income-earning capacity, production levels and overall means of livelihood are improved beyond pre-project levels; • Provide explicit guidance to borrowers on the conditions that need to be met regarding involuntary resettlement issues in Bank operations to mitigate the negative impacts of displacement and resettlement, actively facilitate social development and establish a sustainable economy and society; and • Guard against poorly prepared and implemented resettlement plans by setting up a mechanism for monitoring the performance of involuntary resettlement programmes in Bank operations and remedying problems as they arise.	infrastructure institutions are localized in existing vacant lands have been legally purchased by Andalusia.
Operational Safeguard 3 – Biodiversity, Renewable Resources and Ecosystem Services	• Conserve biological diversity and ecosystem integrity by avoiding or, if avoidance is not possible, reducing and minimising potentially harmful impacts on biodiversity; • Endeavour to reinstate or restore biodiversity, including, where some impacts are unavoidable, through implementing biodiversity offsets to achieve "not net loss but net gain" of biodiversity; • Protect natural, modified, and critical habitats; and • Sustain the availability and productivity of priority ecosystem services to maintain benefits to the affected communities and sustain project performance.	**Not applicable** • The Project is not located in any biodiversity sensitive areas. The nature of the Project does not require the use of natural resources
Operational Safeguard 4 – Pollution Prevention and Control, Hazardous Materials and Resource Efficiency	• Manage and reduce pollutants resulting from the project— including hazardous and nonhazardous waste—so that they do not pose harmful risks to human health and the environment; and • Set a framework for efficiently using all of a project's raw materials and natural resources, especially energy and water	**Applicable** • Project will result in waste, wastewater, air and noise emissions during demolition and construction activities. Project involves the demolition and construction of buildings, and will require the use of hazardous materials in all phases of the Project. The Project will also result in the generation of hazardous waste throughout its various phases.
Operational Safeguard 5 – Labour Conditions, Health and Safety	• Protect workers' rights; • Establish, maintain, and improve the employee–employer relationship; • Promote compliance with national legal requirements and provide supplemental due diligence requirements where national laws are silent or inconsistent with the OS; • Align Bank requirements with the ILO Core Labor Standards, and the UNICEF Convention on the Rights of the Child, where national laws do not provide equivalent protection; • Protect the workforce from inequality, social exclusion, child labour, and forced labour; and • Establish requirements to provide safe and healthy working conditions.	**Applicable** • Project activities will require the recruitment of skilled and unskilled labour. Activities undertaken will pose potential health and safety risks to patients, doctors, medical and non-medical employees and surrounding community.

1.5 Alternatives considered

EEAA guidelines for EIA specifies that alternatives to the proposed Project should be considered including such aspects as location and design. The 'no action' alternative, including the consequences of not carrying out the proposed Project, is also to be considered. For the proposed Project, the following alternatives were considered: 'no action'; location; and design and construction. The conclusion was that the 'no action' alternative is seen as neither practical nor desirable and that the Project in its current conception is preferable to alternative locations, design, and construction.

1.6 Potential Environmental and Social Impacts

No major impacts were identified in the assessment, and overall, the development of the Project is expected to deliver world class health care to the area improving accessibility to treatment and improving the overall health of the community, provide employment opportunities and promote economic growth without resulting in any significantly adverse impacts which cannot be practically and effectively mitigated. Other benefits of the Project include improved livelihoods of local artisans and revenue generation for the governorate.

Positive impacts primarily target the economy and the health of the people, whereby the project will provide job opportunities for different labour classes throughout its life. The expansion of a first-class hospital in the area will ensure proper care is provided for people and improve the overall health of the community. Other benefits include job creation, boosting of local economic / trading activities, improved livelihoods of local artisans and revenue generation for the various governorates.

Conversely, some of the negative impacts likely to result from the Project during the construction phase include:

- Increase in emissions that may adversely affect ambient air quality as a result of construction activities;
- Increase in noise emissions that may affect neighbouring communities during construction activities;
- Increased generation of waste, including hazardous waste material, potentially contaminating soil and misplacing hazardous waste in municipal landfills;
- Increase in daytime noise levels during construction activities; and
- Injuries to workers and community members due to mechanical and/or electrical hazards.

Negative impacts during the operation of the Project include:

- Increased consumption of water for domestic and irrigation purposes (i.e. landscaping);
- Increased generation of wastewater;
- Increased generation of waste, especially hazardous waste, and its improper storage and disposal, which may affect landfilling capacities and cause contamination;
- Potential discharge of hazardous liquids from laboratories into the municipal sewer network; and
- Mechanical and electrical injuries to patients and staff during the operation phase.

Mitigation measures to address these potential impacts for the two phases of the Project are suggested, and if these mitigation measures are effectively implemented, then it is anticipated that the Project will successfully address the challenge of providing increased fuel storage capacity in a manner that fosters environmental and social sustainability. The residual impact is presented post mitigation for each identified impact.

1.7 Environmental and Social Impacts and Mitigation Measure

During the Construction Phase:

Component		Potential Impact	Mitigation/Management Measures	Impact Category	Impact Significance Before Mitigation	Residual Impact After Mitigation	Responsibility	Timeframe	Associated Cost (USD)[5]
Construction Phase									
Environment	Air	Reduced air quality	• Ensure all areas where excavation and earth works are taking place are cordoned off • Make public announcements informing the surrounding community, of construction works timing and location • Perform construction works during the daytime only • Ensure that ground in areas that are heavily used by vehicles and machinery are well compacted • Soil resulting from earthworks will be stockpiled in suitable areas with proper dust control measures such as covering • Regular wetting of dusty surfaces of the construction areas will be performed • Implementation of dust suppression measures such as water spraying on roads, observing speed limits and track maintenance • Cover vehicles transporting material that could disperse dust and minimize drop heights when loaders dump soils into trucks • Perform regular maintenance and monitoring of all fuel-burning equipment • Ensure all workers wear appropriate PPE to avoid the inhalation of dust and gases • No burning of waste, such as plastic bags, cement bags and litter, is permitted on-site • Ensure that equipment/machineries are turned off when not in use • Ensure that vehicles and trucks comply with the limits for exhaust emissions set by Prime Minister Decree 1095/2011 • Power generation units shall comply with the emission limits set by Decree 964/2015 amending Law 4/1994 for diesel fuelled engines Additional mitigation measures for PM10 emissions may include the following: • Dust prone materials, must be sheeted or prevented in other appropriate ways from becoming wind-borne • Soil and other earthen stockpiles, and other dust generating materials, that are to remain undisturbed for some time, should be covered or otherwise stabilised to minimise wind blown dust	Direct	Major	Moderate	Andalusia HSE Independent E&S Consultant	During construction	Included in EPC Contract

[5] Mitigation/Management Measures defined in **bold** are to be financed by the budget allocated for the ESMP.

Component		Potential Impact	Mitigation/Management Measures	Impact Category	Impact Significance Before Mitigation	Residual Impact After Mitigation	Responsibility	Timeframe	Associated Cost (USD)[5]
			• Where activities could generate dust clouds, dust suppression techniques must be adopted, for example water sprays and dampening of access roads and the frequency of spraying will be determined by the site manager on a site specific basis. Suppression techniques should be employed more frequently during dry weather • Materials kept at site, including the stockpiling of soils, should be protected by appropriate measures, for example membranes or spraying with a binding agent • All containers will be covered or enclosed to prevent escape of dust and waste materials during loading and transportation • Efforts should be made to use electricity from the grid and use of diesel generators should be minimised • Diesel generator sets should be regularly maintained to minimise the emissions • Soil stockpile heights should be kept to a minimum height with grading to stabilise side slopes to reduce the risk of erosion • Activities will be planned to ensure that, as far as practical, particularly dusty activities are not carried out in unsuitable weather conditions (e.g. dry/windy) unless suppression is in place • All working areas should be kept in a clean and tidy condition • Materials will be positioned away from residential areas, places of public access or drains						
	Noise	Noise induced hearing loss	• Perform construction works during the day • Include signage in areas where high noise emitting activities will be taking place • Make public announcements informing the surrounding community construction works timing and location • Fixed and mobile equipment (e.g., generators) will be located away from sensitive receptors • Ensure that generators, pile driving machines, pneumatic tools and other heavy machinery shall be fitted with the appropriate noise filters in the form of silencers/mufflers • Elevated noise areas and equipment emitting elevated noise emissions should be identified and all persons working on/in the elevated noise area should be provided with hearing protection • Rubber or other suitable material padding will be provided to fixed equipment so that vibration impact can be absorbed and be prevented from travelling • Regular maintenance of heavy machinery and equipment shall take place • Machinery and equipment not in use will be switched off	Direct	Moderate	Minor	Andalusia HSE Independent E&S Consultant	During construction	Included in EPC Contract

Component		Potential Impact	Mitigation/Management Measures	Impact Category	Impact Significance Before Mitigation	Residual Impact After Mitigation	Responsibility	Timeframe	Associated Cost (USD)[5]
			• Avoid high noise emitting activities after sunset and before sunrise • Avoid transporting materials to the site after sunset and before sunrise • Consider alternative routes that avoid residential areas						
	Water	Reduced water supply to communities	• Ensure that construction activities are carried out in a manner so as to minimise water consumption as far as practically feasible • In order to minimize water consumption, any possible reuse of grey water, previous separate collection and any treatment, shall be considered for dust suppression • Water containers/tanks and hoses/connections shall be regularly inspected to ensure they are waterproof and to promptly detect any water leakage • Ensure that washing/cleaning activities (e.g. machineries washing, toilets flushing/cleaning, etc.) are carried out through methodologies requiring low water consumption or dry cleaning if possible • Install water saving fittings (taps, showerheads, urinals, etc.) in toilets of site offices • Monitor and record supplied water and water consumption quantities on a regular basis • Discharge of wastewater to the soil or groundwater shall be avoided at all costs • Use synthetic turfs for any planned landscapes in the site offices	Direct	Minor	Insignificant	Andalusia HSE Contractor HSE	During construction	Included in EPC Contract
	Waste	Soil contamination	• Ensure all construction waste is stored onsite and properly disposed of at licensed facility and transported by a licensed contractor • Suitably covered general waste receptacles must be placed on a drip tray and must be available at all times as to minimise waste and conveniently placed for the collection of waste every day from site for disposal at a licensed waste facility • Bins should be clearly marked and lined for efficient control and safe disposal of waste • Different waste bins, for different waste streams must be provided to ensure correct waste separation • Waste receptacles should be removed out on a daily basis to prevent any windblown waste and/or visual disturbance • All general waste must be removed from site on a daily basis and disposed of at a registered or licensed disposal facility. Records of appropriate disposal must be maintained onsite. Under no circumstances are the waste receptacles be left or stored onsite • Materials from any earthworks must be recycled and re-used where possible	Direct	Minor	Insignificant	Contractor HSE Andalusia HSE	During construction	Included in EPC Contract

Component		Potential Impact	Mitigation/Management Measures	Impact Category	Impact Significance Before Mitigation	Residual Impact After Mitigation	Responsibility	Timeframe	Associated Cost (USD)[5]
			• Concrete mixing must take place within a designated area at each site. Areas where concrete is mixed must be cleaned up and the apparatus removed at the end of each day. Concrete mixing is to be undertaken on an impervious surface and/or drip tray and any run-off contained. Concrete mixing must be controlled and measured to activity requirements to prevent waste • Hazardous waste is not to be mixed or combined with general waste earmarked for disposal at a municipal landfill site • Hazardous waste must be disposed using techniques appropriate to the situation as per the Waste Management Plan to be developed for the project. The HSE Manager must identify an approved waste disposal site at the inception of the Project • Hazardous waste bins must be clearly marked and stored in a contained, restricted area (or located on an impermeable surface) and covered with a lid • All hazardous waste must be removed from site frequently and disposed of at a registered or licensed hazardous disposal facility. Records of appropriate hazardous waste disposal certificates must be maintained onsite. Under no circumstances are the hazardous waste receptacles to be left or stored on-site • It may be feasible for the waste to be transported to a central point from where it can be collected in bulk by the waste disposal company. It should however be noted that transport of hazardous materials must be done in accordance with applicable legislative control						
	Soil	Soil contamination	• No hazardous liquids (such as paints and solvents) are to be stored directly on the ground surface during construction • Any generators on site must be placed on a drip tray as to prevent soil or surface water contamination. • Designate areas for the proper storage and handling of paints, oils, lubricants and fuels • Re-fuelling and maintenance areas should include some form of secondary containment to avoid spillages • Spill kits are to be distributed around the site in strategic areas to allow for speedy spillage cleanup • All toilets onsite shall be connected to a septic tank to be established onsite. Its capacity shall be at least 110% of the estimated quantity of sewage/wastewater to be collected • Regular inspection on the tanks and pipes shall be performed to ensure there is no leakage or overflow • Regular inspections and maintenance of septic tanks shall be ensured in order to verify and allow effective operation of the sewage collection system	Direct	Minor	Insignificant	Andalusia HSE Contractor HSE	During construction	Included in EPC Contract

Component		Potential Impact	Mitigation/Management Measures	Impact Category	Impact Significance Before Mitigation	Residual Impact After Mitigation	Responsibility	Timeframe	Associated Cost (USD)[5]
			• Wastewater is to be collected by a licenced contractor and discharged into a licensed location (wastewater treatment plant or discharge point) • Documentation of wastewater collection and disposal shall be maintained and kept on site						
	Flora and Fauna	Habitat loss and fauna disturbance	• Limit all construction activities to the boundaries of the working area; reinstate any damage caused by any excursions beyond this	Direct	Minor	Insignificant	Andalusia HSE Contractor HSE	During construction	Included in EPC Contract
Socio-Economic	Project Induced In-Migration	Resentment by locals as a result of lost employment opportunities to migrants	• Prepare job descriptions for the types of employment and supply chain opportunities to be provided to/by local people and businesses for the construction phase of the Project • Assign a community liaison officer for the Project • Prepare a stakeholder engagement plan which includes pre-construction information meetings with locals to discuss potential impacts and mitigations, as well as employment opportunities • Prepare a workers accommodation management plan in the event of employing a significant number of migrant workers. The plan should establish requirements for accommodation selection as well as an inspection plan to ensure the provided accommodation is up to standard.	Direct	Moderate	Minor	Andalusia LCO	Prior to construction During construction	Included in EPC Contract
	Child/Forced Labour	Child labour, forced labour and non-compliance with regulations	• Prepare a Code of Conduct to be delivered as part of the induction for all workers • Ensure contractors and sub-contractors have HR policies, procedures and Code of Conduct aligned with Egyptian law and carry out regular monitoring to confirm their implementation. If not available by contractors, ensure Andalusia's Code of Conduct is signed by all contractors and their workforce • Ensure provisions of the Code of Conduct are agreed on by subcontractors and suppliers, and its provisions included as clauses in contracts • Undertake regular random monitoring (at least once a week) of all labourers onsite by means of a labour inspection checklist to ensure compliance with the Code of Conduct and procedures • Review certification documents of subcontractors and suppliers to ensure compliance with regulations • Prepare and implement a stringent selection and evaluation process for the selection and management of contractors and subcontractors with particular focus on environmental, health and safety and labour provisions.	Direct	Moderate	Minor	Andalusia LCO	Prior to construction During construction	Included in EPC Contract

Component		Potential Impact	Mitigation/Management Measures	Impact Category	Impact Significance Before Mitigation	Residual Impact After Mitigation	Responsibility	Timeframe	Associated Cost (USD)[5]
Cultural Heritage		Destroyed, disturbed or removed cultural heritage	• Any chance finds or suspected evidence of archaeological and/or historical materials would be immediately reported by any of the construction workers, or other parties involved in the construction phase and all works should be stopped immediately, until further notice • Chance finds should be immediately reported to the Egyptian Authority of Antiquities	Direct	Moderate	Minor	Andalusia HSE Contractor HSE	During construction	Included in EPC Contract
Health and Safety	Electrical Safety	Injury from electrocution and burns	• Marking all energized electrical devices and lines with warning signs • Locking out (de-charging and leaving open with a controlled locking device) and tagging-out (warning sign placed on the lock) devices during service or maintenance • Checking all electrical cords, cables and hand power tools for frayed or exposed cords and following manufacturer recommendations for maximum permitted operating voltage of the portable hand tools • Protecting power cords and extension cords against damage from traffic by shielding or suspending above traffic areas • Appropriate labelling of high voltage equipment ('electrical hazard') and where entry is controlled or prohibited • Establishing "No Approach" zones around or under high voltage areas • Ensure workforce involved in electrical works are competent and have appropriate supervision	Direct	Moderate	Minor	Andalusia HSE Contractor HSE	During construction	Included in EPC Contract
	Machine and Mechanical Safety	Injuries from falling objects, moving equipment/machines	• Implementation of manufacturer's safety devices to protect workers when using machinery • Establishment, maintenance and review of safe working procedures • Conducting risk assessment to ensure safety in the use of machinery by reducing the associated risks • Risk assessment should be completed by employers to ensure that the machinery is safe and to provide a safe system of work • Workers should be consulted to reflect their views and experiences, and should actively participate in the risk assessment procedures • Control of risks through engineering controls, such as where a machine or equipment has an exposed moving part or exposed pinch point that may endanger the safety of any worker, the machine or equipment should be equipped with, and protected by, a guard or other device that prevents access to the moving part or pinch point • Guards should be designed and installed in conformance with appropriate machine safety standards	Direct	Moderate	Minor	Andalusia HSE Contractor HSE	During construction	Included in EPC Contract

Component		Potential Impact	Mitigation/Management Measures	Impact Category	Impact Significance Before Mitigation	Residual Impact After Mitigation	Responsibility	Timeframe	Associated Cost (USD)[5]
			• Apply administrative controls, including appropriate procedures, training and systems of work; and use of PPE						
	Hazardous Materials	Health deterioration from liver, kidney irritation	• Ensure all hazardous material storage areas are adequately cordoned off and ample signage displayed • Provide appropriate training to site personnel on the handling and use of hazardous materials • Maintain storage areas to ensure that they are organized, secure, clean and dry • Record all hazardous materials held on site in an inventory with Materials Safety Data Sheets (MSDS) available in the appropriate language • Prepare procedures for handling and treatment in the event of spillage • Provide secondary spill containment for bulk storage and tanks • Provide spill kits and fire extinguishers in areas containing hazardous materials • Wastes, chemicals and fuels shall be stored within impermeable bunds of 110% the volume of the container • Conduct regular inspection of all bulk containment facilities and effluent holding tanks to ensure integrity of storage • Provide PPE that is fit for the task to prevent injury and exposure to hazardous materials • Train staff in the correct selection, use and maintenance of PPE. Inspect PPE regularly and maintain or replace as necessary • Inventory dangerous substances and develop a clear policy and procedure for control and management of risks (accidents, incidents and emergencies) • Classify areas where hazardous explosive atmospheres or chemicals may occur into zones • Convey of information and proper training to employees to control or deal with the risks arising from dangerous substances	Direct	Moderate	Minor	Andalusia HSE Contractor HSE	During construction	4,000
	Traffic Management	Accidents and collisions	• Develop a Traffic Management Plan for the construction phase	Direct	Moderate	Minor	Andalusia HSE Contractor HSE	During construction	Included in EPC Contract

Component		Potential Impact	Mitigation/Management Measures	Impact Category	Impact Significance Before Mitigation	Residual Impact After Mitigation	Responsibility	Timeframe	Associated Cost (USD)[5]
			• Training and licensing industrial vehicle operators in the safe operation of specialized vehicles such as backhoe loader, including safe loading/unloading and load limits • Safety belts are to be worn by the driver and all passengers in the vehicle • Ensuring moving equipment with restricted rear visibility is outfitted with audible back-up alarms • Establishing rights-of-way (segregated from pedestrian areas), site speed limits, vehicle inspection requirements, operating rules and procedures (e.g. prohibiting operation of forklifts with forks in down position), and control of traffic patterns or direction • Restricting the circulation of delivery and private vehicles to defined routes and areas, giving preference to 'one-way' circulation, where appropriate • No persons are to be transported on the back of light duty vehicles • The use of cell-phones while driving is prohibited • Traffic rules are to be established and drivers are to be made aware of these rules through training sessions and toolbox talks						
	Slips, Trips and Falls	Injuries	• Assess the causes of slip, trip and fall hazards and address accordingly • Try to place equipment to avoid cables crossing pedestrian routes and use cable guards to cover cables where required • Ensure suitable footwear is worn in areas likely to pose slip, trip or fall hazard • Make sure rugs or mats are securely fixed and that edges do not present a trip hazard • Improve visibility, lighting and hand rails. Add tread markers or other floor markings where visibility is poor • Ensure barricading is in place where it is needed, especially around areas below ground level, and ensure covering all pits and manholes	Direct	Moderate	Minor	Andalusia HSE Contractor HSE	During construction	Included in EPC Contract
	Manual Handling	Spinal disc problems and musculoskeletal disorders that range in severity from minor medically	• Implementation of a safe system of work plans for site-specific tasks, providing information on the use of mechanical aids • Reorganization of a work activity to allow loads to be handled at a safe height or the provision of instruction to workers on how to use handling aids or handle loads safely • Use of mechanical aids for all or part of the activity • Redesign manual processes to avoid lifting/repetitive activities • Install mechanical lifting aids where possible • Reorganization of work area or materials	Direct	Moderate	Minor	Andalusia HSE Contractor HSE	During construction	Included in EPC Contract

Component		Potential Impact	Mitigation/Management Measures	Impact Category	Impact Significance Before Mitigation	Residual Impact After Mitigation	Responsibility	Timeframe	Associated Cost (USD)[5]
		controlled conditions to disabling injuries	• Where handling will still take place, instruction in safe lift techniques • A job rotation system to be introduced so that workers are not involved in this activity for long periods of time • Assess tasks throughout the process, with particular focus on heavy and repetitive tasks						
	COVID-19	COVID-19 Cases and Outbreak	• Wearing a face mask and keeping physical distance with other people of at least 1,5-meter distance. • Avoid shaking hands. • Regularly and thoroughly washing hands with soap and water or cleaning hands with an alcohol-based hand rub as recommended by WHO. • Following good respiratory hygiene. This means covering mouth and nose with bent elbow or tissue when coughing or sneezing. • Avoiding touching eyes, nose and mouth. • Cleaning and disinfecting frequently touched objects and surfaces. • Informing the supervisor or manager when a worker does not feel well, especially if they have a fever, cough and/or difficulty in breathing. • Ensure all workers are COVID-19 vaccinated before being hired. Vaccines are also available and provided free of charge by the Ministry of Health.	Direct/Indirect	Major	Moderate	Andalusia HSE Contractor HSE	During construction	Included in EPC Contract
Community Health and Safety	Traffic	Traffic accidents	• Develop a Traffic Management Plan for the construction phase • Ensure all vehicles/trucks follow traffic rules • Transportation of material to the Project site should occur only during daytime working hours • Avoid material delivery during rush hours so as not to increase traffic congestion • Organize workers buses arrival and departure to avoid traffic congestion • Ensure all drivers are properly trained	Indirect	Moderate	Minor	Andalusia HSE Contractor HSE	During construction	Included in EPC Contract
	Security	Health and safety hazards to community Theft/tampering of equipment	• Erect security fence around the site • Train security to perform regular patrols of the site • Check IDs of all persons before entering the site to ensure they are part of the workforce • Ensure all equipment is securely stored with restricted access		Moderate	Minor	Andalusia HSE Andalusia Security	During construction	Included in EPC Contract

During the Operation Phase:

Component		Potential Impact	Mitigation/Management Measures	Impact Category	Impact Significance Before Mitigation	Residual Impact After Mitigation	Responsibility	Timeframe	Associated Cost (USD)[6]
Environment	Air Quality	Reduced air quality	• Develop an Indoor Air Quality Management Plan and a vehicle inspection and maintenance procedure • Strictly follow manufacturer/supplier instructions • Ensure MSDS for all chemicals are available and shared with staff/ workers handling them • Ensure all areas have proper ventilation in place (active or passive) • Limit the exposure time and/or usage time of tools/activities resulting in dust or fumes • Provide respirators for use where harmful dusts or fumes exist • Ensure all machine, equipment and tools are regularly maintained and serviced • Switch off any machine, equipment or tool that is not in use	Direct	Moderate	Minor	Andalusia HSE	During operation	Included in the budget
	Noise	Noise induced hearing loss, tinnitus, loss of focus	• All areas with high noise emitting activities showed be clearly demarcated with signage • Ear protection should be worn at all times during high noise emitting activities • Apply source control techniques to reduce noise, such as reducing speed of moving parts, reducing friction, • Rotational activities should be performed to reduce staff and patient exposure time to high noise emitting activities • All equipment should be regularly maintained/serviced for better operation • Where applicable, install rubber platforms to reduce noise emissions from vibrations • Select equipment fitted with silencers	Direct	Moderate	Minor	Andalusia HSE Independent E&S Consultant	During operation	Included in the budget

[6] Mitigation/Management Measures defined in **bold** are to be financed by the budget allocated for the ESMP.

	Water	Reduced water supply to communities/pressure on water network	• Launch a resource efficiency campaign across the hospital (signage, seminars, etc.) • Ensure that washing/cleaning activities (e.g. machineries washing, toilets flushing/cleaning, etc.) are carried out through methodologies requiring low water consumption or dry cleaning if possible • Increase "dry landscaping" (xeriscaping) onsite and decrease water intensive turfs • Use drip irrigation techniques • Select vegetation that does not require large quantities of water to grow • Install resource efficient fittings	Direct	Minor	Insignificant	Andalusia HSE	During operation	2,000 and included in EPC Contract (for synthetic turf)
	Waste	Soil contamination/pressure on landfills	**<u>Non-Hazardous Waste</u>** • Develop waste management awareness campaigns across the hospital (signage, seminars, newsletters, etc.) • Distribute colour coded waste receptacles across the hospital and ensure they are labelled with photographic/visual references • Establish a waste storage area onsite where large waste bins for each type of waste are available • Empty waste bins into the main waste dumping area on a daily basis • Train and inform all maintenance workers on waste segregation • Identify recycling companies which can purchase the various types of recyclable waste generated • Different waste bins, for different waste streams must be provided to ensure correct waste separation • Non-recyclable waste must be removed from site on a daily basis and disposed of at a registered or licensed disposal facility by a licensed entity. • Records of appropriate disposal must be furnished to Andalusia on a monthly basis. Under no circumstances are the waste receptacles be left or stored onsite **<u>Hazardous Waste</u>** • Establish a hazardous waste storage area as per Law 4/1994 • Hazardous waste is not to be mixed or combined with general waste earmarked for disposal at a municipal landfill site • Hazardous waste must be disposed of using techniques appropriate to the situation as per the Waste Management Plan. The HSE Manager must identify an approved waste treatment and disposal site. • Hazardous waste bins must be clearly marked and stored in a contained area (or located on an impermeable surface) and covered with a lid	Direct	Moderate	Minor	Andalusia HSE	During operation	4,000

			• All hazardous waste must be removed from site on a monthly basis and disposed of at a registered or licensed hazardous disposal facility. Records of appropriate hazardous waste disposal certificates must be furnished to Andalusia when hazardous waste is removed for offsite disposal						
	Wastewater	Health hazard to patients and staff	• Clearly display wastewater handling rules, including liquid waste disposal • Distribute colour coded liquid waste receptacles inside all contaminated wastewater generation areas and ensure they are labelled with photographic/visual references • Ensure all liquid waste is collected on a daily basis and stored in the designated hazardous waste storage area • Records of appropriate disposal must be furnished to Andalusia on a monthly basis • Regularly inspect the wastewater infrastructure (drains, pipelines, manholes, etc.)	Direct	Moderate	Minor	Andalusia HSE	During operation	2,000
	Energy	Greenhouse gas emissions – global warming	• Consider passive designs for cooling, heating and lighting in all buildings • Install energy efficient lighting • Consider designing natural ventilation systems • Install motion sensors for lighting • Ensure buildings are well insulated to avoid the escape of hot and/or cool air depending on season • Ensure all equipment and machines are only used whenever required • Install dimmers wherever possible • Unplug high energy demanding equipment when not in use • Switch off computers, printers and all other appliances at the end of day • Use timers for air conditioning and ventilation systems • Install energy meters to monitor consumption	Direct	Major	Moderate	Andalusia HSE	During operation	Included in the budget and EPC Contract
Socioeconomic	Labour Conditions and Community Wellbeing	Poor employee relationships and worker exploitation Poor community engagement causing resentment toward the Project	• Create welfare facilities (i.e. sitting areas, recreational areas, etc.) for staff, patients and visitors • Introduce behavioural and communication training programs • Launch awareness campaigns on the code of conduct/ HR policy developed for the Project • Develop a workers grievance mechanism allowing workers to communicate their complaints without fear of retribution • Prepare a stakeholder engagement plan (SEP) identifying the primary stakeholders, the information to be shared with them and the appropriate communication channels • Develop a community grievance mechanism which will allow community members to come forward with their	Direct	Moderate	Minor	Andalusia HSE	During operation	4,000

			complaints and grievances, and allowing their grievances to be addressed in a timely manner						
	Gender based violence and discriminati on	Psychological, emotional, physical stress	• Develop and distribute a policy on gender-based violence and discrimination • Develop punitive measures to address cases of gender-based violence and discrimination • Offer counselling services to victims of gender-based violence and discrimination • Increase awareness of the problem and its impact • Establish a grievance mechanism with specific measures to accommodate complaints on gender-based violence and harassment • Introduce prevention programs as part of curricula focusing on conflict resolution, teamwork, problem solving	Direct	Moderate	Minor	Andalusia HSE	During operation	Included in the budget
Health and Safety	Injuries, Infection and Diseases	Injuries, Infection and Diseases	• Develop an infection control procedure for the Project defining responsibilities, resources and management/ mitigation measure for potential infection risks within the Project • Ensure only experienced and qualified staff are supervising the use of all equipment and machines • Ensure there is restricted access to the high-risk areas such as imaging devices • No worker is allowed to operate any equipment and/or machine without the appropriate training/induction and written permission to proceed by the technician in charge • Regularly maintain and service equipment and machines • Risk assessments and control measures should be completed as part of the Project involving injury or infection risks • All areas and surfaces are to be cleaned and sanitized frequently according to a pre-established schedule • Only referred patients will be allowed to enter X-Ray room • X-ray department to distribute PPE for operators and patients • Radioactive and Infection safety awareness campaigns (training, signage) to be prepared • The same mitigation measures for waste handling during the operation phase	Direct	Moderate	Minor	Andalusia HSE	During operation	Included in the budget

	Electrical Hazards	Shock, burns, electrocution	• Ensure only experienced and qualified technicians are supervising the use of all equipment and machines • Ensure there is restricted access to the electrical boards • No worker is allowed to operate any equipment and/or machine without the appropriate training/induction and written permission to proceed by the technician in charge • No liquids are to be stored and/or handled near electrical equipment • Install ground-fault circuit interrupters • Regularly maintain and service equipment and machines • Risk assessments and control measures should be completed as part of the Project involving electrical works and safe systems of work certificates issued for all equipment and machines • Working on electrical equipment alone is prohibited – there must be at least one other individual in proximity • Prepare and display clear instructions on how electrical hazards and how to deal with someone who has come in contact with an electrical source • Mitigation measures applied for the construction phase	Direct	Moderate	Minor	Andalusia HSE	During operation	Included in the budget
	Hazardous Materials	Skin, eye, lung irritation	• Develop a hazardous materials management procedure. • Develop a release form for liquid/ solid hazardous materials to track quantities used and ensure proper/safe disposal • Maintain MSDS for all hazardous materials • Establish restricted access areas for liquid/solid hazardous materials/substances • Avoid overusing hazardous materials/substances • Ensure all hazardous material handlers/users are wearing appropriate PPE • Prepare and display procedures on how to handle a chemical spill • Provide spill kits, first-aid kits and fire extinguishers to handle any spill • Ensure all gas cylinders are properly secured in a well ventilated and protected area away from heat and the sun • Ensure all gas cylinders(full or empty) are supported and in an upright position at all times • Mitigation measures applied for the construction phase	Direct	Moderate	Minor			4,000
	COVID-19	COVID-19 Cases and Outbreak	• Wearing a face mask and keeping physical distance with other people of at least 1,5-meter distance. • Avoid shaking hands. • Regularly and thoroughly washing hands with soap and water or cleaning hands with an alcohol-based hand rub as recommended by WHO. • Following good respiratory hygiene. This means covering mouth and nose with bent elbow or tissue when coughing or sneezing. • Avoiding touching eyes, nose and mouth. • Cleaning and disinfecting frequently touched objects and surfaces.	Direct/Indirect	Major	Moderate	Andalusia HSE Contractor HSE	During operation	Included in the budget

			• Informing the supervisor or manager when a worker does not feel well, especially if they have a fever, cough and/or difficulty in breathing. • Ensure all workers are COVID-19 vaccinated before being hired. Vaccines are also available and provided free of charge by the Ministry of Health.						
Community Health and Safety	Traffic	Traffic accidents	• Develop a Traffic Management Plan for the operation phase • Ensure all vehicles/trucks follow traffic rules • Transportation of material to the Project site should occur only during daytime working hours • Avoid material delivery during rush hours so as not to increase traffic congestion • Organize workers buses arrival and departure to avoid traffic congestion • Ensure all drivers are properly trained	Indirect	Moderate	Minor	Andalusia HSE Contractor HSE	During operation	Included in the budget
	Security	Equipment/machine theft Injuries to communities trespassing	• Train security to perform regular patrols of the site • Check IDs of all persons before entering the site to ensure they are either patients, staff or workers • Maintain visitor logs at all entrances and exits • Ensure all equipment is securely stored with restricted access	Indirect					Included in the budget

1.8 Environmental and Social Monitoring Plan

During Construction:

Component	Aspect	Parameter to be Monitored (i.e. activity)	Method	Location	KPI	Frequency	Responsibility	Cost (USD)
Environment	Air	Parameters listed in **Table 3-2**	Instrument/Laboratory	Nearest sensitive receptor (at least one upwind and one downwind of site)	Number of complaints from workers/third parties Compliance with Law 4/1994	Annual	Andalusia HSE Independent E&S Consultant/Laboratory	6,000

Component	Aspect	Parameter to be Monitored (i.e. activity)	Method	Location	KPI	Frequency	Responsibility	Cost (USD)
	Ambient Noise	Parameters listed in **Table 3-6**	Instrument/Laboratory Visual	Nearest sensitive receptor (at least one upwind and one downwind of site)	Number of complaints from workers/third parties Dust and particles Compliance with Law 4/1994	Annual	Andalusia HSE Independent E&S Consultant/Laboratory	3,000
	Workplace Noise	Parameters listed in **Table 3-7**	Instrument/Laboratory	Work with high noise emitting activities	Number of complaints from workers/patients/visitors Compliance with Law 4/1994	During high noise emitting activities	Andalusia HSE Contractor and Subcontractor HSE Independent E&S Consultant/Laboratory	3,000
		Noise generating activities	Visual	All construction sites	Number of noise complaints from workers/patients/visitors	Daily	Andalusia HSE Contractor and Subcontractor HSE	Overhead cost
	Water	Quantity of water consumed in m^3	Receipt inspection	m^3 of consumed water per month/total worked man hours per month	-	Monthly	Andalusia HSE	Overhead cost
	Potable Water	Parameters listed in **Table 3-9**	Laboratory	Water trucks	Number of complaints from workers Number of reported water-related illnesses Non-compliance with drinking standards	Monthly	Andalusia HSE Independent E&S Consultant/Laboratory	3,000
	Waste	Inspection of waste storage areas	Visual	Hazardous and non-hazardous storage areas	Good housekeeping Waste properly segregated Recycled waste rate	Daily	Andalusia HSE Contractor and Subcontractor HSE	Overhead cost
		Non-hazardous and hazardous quantity, type, transportation method, disposal method, manifests	Receipt/records inspection	Office/administration	Quantity of hazardous and non-hazardous waste generated Recycled waste rate	Monthly	Andalusia HSE Contractor and Subcontractor HSE	Overhead cost

Component	Aspect	Parameter to be Monitored (i.e. activity)	Method	Location	KPI	Frequency	Responsibility	Cost (USD)
	Wastewater	Parameters listed in **Table 3-10**	Laboratory	Effluent discharge point	Number of non-compliances	Quarterly	Andalusia HSE Contractor and Subcontractor HSE	4,000
	Soil	Evidence of soil stains	Visual	Hazardous waste storage areas Hazardous material storage area Beneath and around generators	Quantities of contaminated soil Number of oil/chemical spills reported Proper waste segregation for hazardous and non-hazardous waste Proper hazardous material storage	Daily	Andalusia HSE Contractor and Subcontractor HSE	Overhead cost
	Flora and Fauna	Visual observations for evidence of fauna	Visual	Work sites Vacant land spaces within premises	Number of faunal sightings	Daily	Andalusia HSE Contractor and Subcontractor HSE	Overhead cost
Social	Project Induced In-Migration	Number of workers and their origins	ID checks	Site entrance/gates	Complaints from communities regarding lack of employment/training opportunities	Daily	Andalusia Security Andalusia LCO	Overhead cost
	Child/Forced Labour	Inspection of contractors and subcontractors	ID checks Visual	Site entrance/gates	Number of incidents of child/forced labour	Daily		Overhead cost
Cultural Heritage	Chance Finds	Inspections during excavation	Visual	All excavation areas	Number of chance finds	During excavation activities	Andalusia HSE Contractor and Subcontractor HSE	Overhead cost
Staff Health and Safety	Electrical Safety Management	Inspections of electrical devices, cables and connections	Visual	Areas where equipment/machines are being used	Number of incidents/near misses/injuries	Daily	Andalusia HSE Contractor and Subcontractor HSE	Overhead cost
	Machine and Mechanical Safety	Inspection of all equipment and machines	Visual	Areas where equipment/machines are being used	Number of incidents/near misses/injuries	Daily	Andalusia HSE Contractor and Subcontractor HSE	Overhead cost

Component	Aspect	Parameter to be Monitored (i.e. activity)	Method	Location	KPI	Frequency	Responsibility	Cost (USD)
	Hazardous Materials	Inspection of hazardous material storage area	Visual	Hazardous material storage area	Number of spills and leaks	Weekly	Andalusia HSE Contractor and Subcontractor HSE	Overhead cost
	Traffic Management	Inspection of vehicles/traffic rules	Visual	Parking areas Work sites	Number of traffic violations	Daily	Andalusia HSE Contractor and Subcontractor HSE	Overhead cost
	Slips, Trips and Falls	Inspections of trip, slip and fall hazards in work areas	Visual	Working areas	Number of incidents/near misses/injuries	Daily	Andalusia HSE Contractor and Subcontractor HSE	Overhead cost
	Manual Handling	Inspection of manual activities	Visual	Areas where lifting is required	Number of incidents/near misses/injuries	Daily	Andalusia HSE Contractor and Subcontractor HSE	Overhead cost
Community Health and Safety	Traffic	Delivery of materials	Visual Records of delivery	construction sites	Number of reported accidents Number of complaints from locals regarding traffic congestion caused by the Project	Monthly	Andalusia HSE Contractor and Subcontractor HSE	Overhead cost
	Security	Inspection of materials, equipment Inspection of workforce IDs	Visual Records	Site entrances/exits construction sites	Number of theft/tampering incidents	Daily	Andalusia Security	Overhead cost

During Operation:

Component	Aspect	Parameter to be Monitored (i.e. activity)	Method	Location	KPI	Frequency	Responsibility	Cost (USD)
Environment	Indoor Air	TBD based on chemicals used inside laboratory as per parameters listed under	Instrument/Laboratory	Inside chemical laboratories	Number of complaints from workers/patients/visitors	Annual	Andalusia HSE	2,000

		Law 4/1994, Executive Regulation 1095, Annex 8, Table 1			Number of incidents/illnesses caused by chemicals Compliance with Law 4/1994			
	Noise	Parameters listed in **Table 3-7**	Instrument/Laboratory	Inside workshops	Number of complaints from workers/patients/visitors Compliance with Law 4/1994	Once a year to determine noise levels during normal hospital activities	Andalusia HSE	2,000
	Waste	Inspection of waste storage areas	Visual	Hazardous and non-hazardous storage areas	Good housekeeping Waste properly segregated Recycled waste rate	Daily	Andalusia HSE Contractor and Subcontractor HSE	Overhead cost
		Non-hazardous and hazardous quantity, type, transportation method, disposal method, manifests	Receipt/records inspection	Office/administration	Quantity of hazardous and non-hazardous waste generated Recycled waste rate	Monthly	Andalusia HSE Contractor and Subcontractor HSE	Overhead cost
	Wastewater	Parameters listed in **Table 3-10**	Laboratory	Effluent discharge point	Number of non-compliances	Annual	Andalusia HSE Contractor and Subcontractor HSE	200
Socioeconomic	Labour Conditions and Community Well Being	Discussions with neighbours	Survey	Residential areas adjacent to site	Number of complaints from workers Number of complaints from community members	Monthly	Andalusia LCO	Overhead cost
	Gender Based Violence and Discrimination	Discussions with affected workers/patients/visitors	Survey	Within Project boundaries	Number of reported incidents	Monthly	Andalusia LCO	Overhead cost
Staff Health and Safety	Injuries, Infection and Diseases	Inspection of all equipment/ materials with the potential to cause injury or spread diseases	Visual	Within Project boundaries	Number of reported observations Number of incidents	Weekly	Andalusia HSE Contractor and Subcontractor HSE	Overhead Cost

	Electrical Safety Management	Inspections of electrical devices, cables and connections	Visual	Areas where equipment/machines are being used	Number of incidents/near misses/injuries	Daily	Andalusia HSE Contractor and Subcontractor HSE	Overhead cost
	Hazardous Materials	Inspection of hazardous material storage area	Visual	Hazardous material storage area	Number of spills and leaks	Weekly	Andalusia HSE Contractor and Subcontractor HSE	Overhead cost
Community Health and Safety	Traffic and Congestions	Visual	Visual Records	Street where the site is located	Number of reported observations Number of complaints from workers/ community members	Daily	Andalusia HSE Contractor and Subcontractor HSE	Overhead cost
	Inspection of materials, equipment Inspection of staff/ patient IDs	Visual	Visual Records	Entrances/exits	Number of theft/tampering incidents	Daily	Andalusia Security	Overhead cost

1.9 ESMP Costs

Component	Cost (USD)
Recruitment of HSE personnel and LCO/E&S Specialist	40,000
Environmental and Social Mitigation Measures	19,000
Environmental and Social Monitoring	22,200
Environmental and Social Management Plans	9,900
Full GRM Deployment and Monitoring	3,000
Training	10,000
E&S audit from the second year of project start-up	5,000
TOTAL	**109,100**

2 INTRODUCTION

2.1 Project Rationale

The Egyptian health-care system faces numerous obstacles in enhancing and ensuring the Egyptian people's health and well-being. Not only does the system have to deal with diseases linked to poverty and a lack of education, but it also has to deal with new diseases and illnesses linked to modern, urban lifestyles. The population's demands for more and better treatment, as well as advanced health care technologies, are rising as global communications and commerce become more accessible.

The demographic burden on Egypt's health system is increasing due to a high birth rate mixed with a longer life expectancy. With approximately 100 million people living within its boundaries and another 10 million residing abroad, Egypt is one of the most populated Arab countries in the world. With a population growth rate of 2.5 percent per year, demand for physical and social infrastructure, such as healthcare and education, is on the rise. Egypt's healthcare sector's long-term success will be determined by how rapidly it accepts new technology and innovations based on global research and development (R&D) and adopts a data-driven, patient-centric, and results-oriented approach to the industry.

It is estimated that by 2030, Egypt will require approximately 38,000 new beds (based on Egypt's ratio of 1.3 beds/1,000 population) with an estimated investment of US$8 to 13 billion, and up to 120,000 new beds (based on the MENA ratio of 1.9 beds/1,000 population) with an estimated investment of US$25 to 40 billion, with the public sector funding half of these investments. The investment needed to close this gap was calculated based on the current cost of construction with fitouts for a Grade A hospital, which is in the range of US$ 1,500/sqm to US$ 2,000/sqm (average US$1,750/sqm), while the gross area per bed ranges from 90 sqm to 120 sqm (average 115 sqm), with investment in medical fitouts ranging from US$80,000 to US$100,000 per bed. Furthermore, since “Doctor’s Clinics” are one of the popular services in Egypt, it is estimated that the country will require approximately two million square metres of medical clinic space by 2030, at a cost of US$1 billion, providing opportunities for developers to develop and sell clinics to doctors/investors[7].

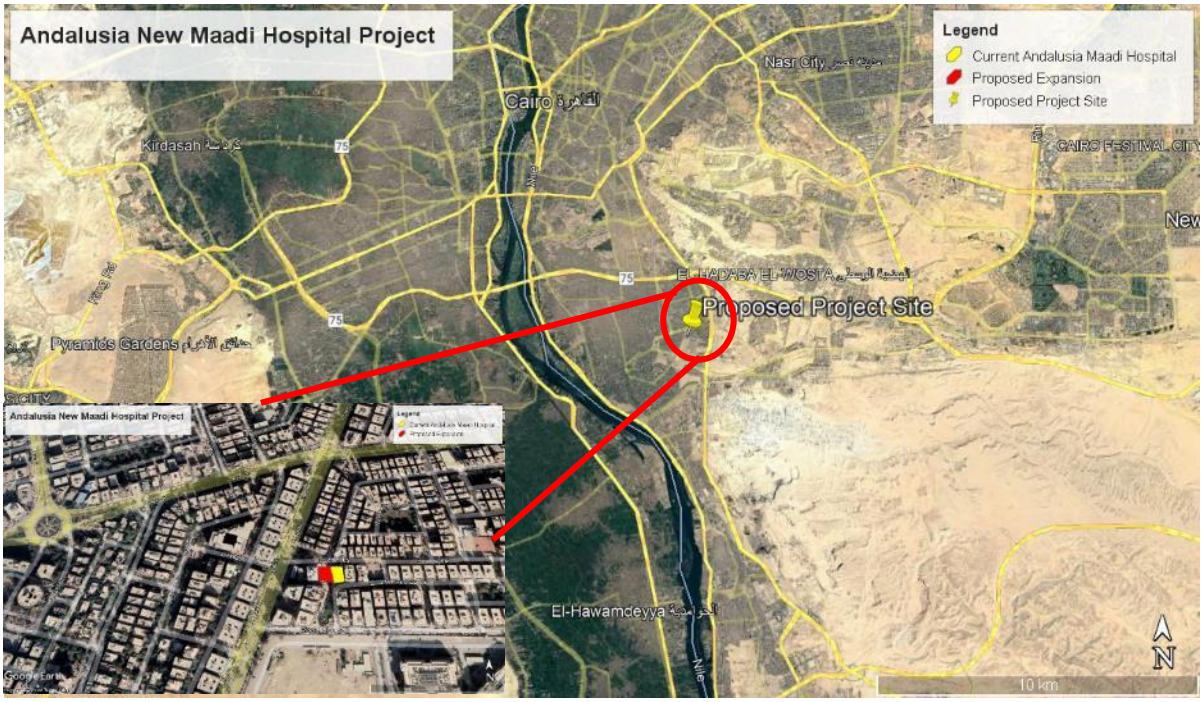
There is a clear gap in the Egyptian healthcare sector and the AOH Project will contribute towards bridging this gap. The Project will bring new technology and expertise to provide world-class health care and medical services for the community. Not only will the hospital provide in-patient care, but it will also include out-patient clinics, serving both deficiencies highlighted by Colliers report.

2.2 Project Scope

The African Development Bank (AfDB) is considering providing an investment loan to support the enhancement of the Egyptian healthcare sector through supporting Andalusia Group (later referred to as the “Developer”, “Andalusia”), for the establishment of a first-class hospital at the Maadi district in Cairo, Egypt (later referred to as the “Project”). The location of the Project is shown in the figure below.

[7] The information presented in the section was obtained from Colliers Egypt Healthcare Overview: Research and Forecast Report 2021/2022, accessed at: https://www.colliers.com/en-eg/research/cairo/egypt-healthcare-overview

Figure 2-1: Proposed Project Site



2.3 Project Categorization

Law 4/1994 and its amendments, also known as the Law on Protection of the Environment, and its executive regulations require Environmental Impact Assessments (EIAs) for new projects and expansions as well as renovations of existing projects.

This law classifies projects into three categories based on different levels of EIA requirements according to severity of possible environmental impacts and location of the establishment and its proximity to residential settlements:

- Category (A): Projects with minimum environmental impacts. These are required to complete an environmental impact assessment form A;
- Category (B): Projects with potential adverse environmental impacts yet less adverse than Category C. These are required to complete an environmental impact assessment form B; and
- Category (C): Projects which have highly adverse impacts, and which are required to have a full, detailed EIA study.

In accordance with Law No. 4 of 1994, the Project is considered to be categorised as a Category Scope B Project. According to the Egyptian Environmental Affairs Agency's (EEAA) Guidelines of Principles and Procedures for EIA (2nd Edition - January 2009), a Category B EIA should include the following information:

- Indicate Name of Parties Preparing the Form
- Laws and Regulations
- Project Description
- Environmental and Social Description
- Assessment of Potential Environmental and Social Impacts
- Analysis of Alternatives
- Environmental and Social Management Plan (EMP)

An explanation of the approval process is presented in Section 3.1.

AfDB's Operational Safeguard (OS) 1 "Environmental and Social Assessment" requires that all projects financed by the Bank conduct and environmental and social impact assessment to determine the project's environmental and social category and the resulting environmental and social assessment requirements. Based on AfDB's OS 1, the project is considered to be categorized as a Category 2 Project, which is defined as a project, which is "likely to have detrimental site-specific environmental and/or social impacts that are less adverse than those of Category 1 projects." Category 2 projects also require the preparation of an Environmental and Social Management Plan (ESMP), which is presented in Section 10 of this ESIA.

2.4 Objectives of the ESIA

The purpose of the report is to present the findings of the ESIA to obtain environmental authorization from the EEAA and to ensure that impacts and risks associated with the proposed Project are understood and adequately managed. The objectives of the ESIA are as follows:

- Identify and assess environmental and social impacts of the Project, both positive and negative;
- Recommend measures to avoid, or where not possible, minimise, mitigate or compensate for negative impacts on workers, affected communities, and the environment;
- Prepare an Environmental and Social Management Plan (ESMP) in accordance with AfDB's OS1;
- Conduct stakeholder engagement activities to document the perceptions, concerns and grievances towards the Project;
- Engagement with the EEAA;
- Provide AfDB with an ESIA and ESMP to enable for the Project's appraisal before the Bank's board; and
- Obtain approval for the Project by the EEAA

2.5 Structure of this Report

This report has been structured as follows:

Section 1 – Non-Technical Summary

Section 2 – Introduction

Section 3 – Policy, Legal and Institutional Framework

Section 4 – African Development Bank Operational Safeguards

Section 5 – Project Description

Section 6 – Environmental Baseline

Section 7 – Social Baseline

Section 8 – Project Alternatives

Section 9 – Environmental and Social and Impacts and Mitigation Measures

Section 10 – Environmental and Social Management Plan

Section 11 – Stakeholder Engagement Outcomes

Annex 1 – Documentation Reviewed

3 NATIONAL LEGISLATIVE AND REGULATORY FRAMEWORK

3.1 Egyptian Environmental Legal and Institutional Framework

It is important to note that for the purpose of this ESIA, Andalusia Group (AG) is the project proponent, and MHP is the Competent Administrative Authority (CAA).

Law 4/1994 and its amendments, also known as the Law on Protection of the Environment, and its executive regulations require Environmental and Social Impact Assessments (ESIAs) for new projects and expansions as well as renovations of existing projects. The CAAs for EIAs in Egypt are sectorial Ministries and Governorates (in this case MHP), given the fact that they possess the executive powers in relation to development authorization. Moreover, the CAAs are required by Law 4 to conduct the screening of projects, while the Central EIA Department of the Egyptian Environmental Affairs Agency (EEAA) is in charge of supervising the screening process, managing the review of ESIA reports, making decisions on the acceptability of EIA reports, and giving an opinion on the development and proposals for mitigating measures.

The following is a brief description of the different national authorities and institutions of relevance to this project (EEAA, EMU, and CAA).

The EEAA is an authorized state body regulating environmental management issues. The three main roles of the EEAA defined by Egyptian Laws are as follows:

- Regulatory and coordinating role in most activities, as well as an executive role restricted to the management of natural protectorates and pilot projects.
- The agency is responsible for formulating the environmental management policy framework, setting the required action plans to protect the environment. Following-up their execution in coordination with CAAs; EEAA is responsible for reviewing and approving ESIAs.
- It imposes administrative fees for reviewing ESIA studies and issuing environmental permits.

The Environmental Management Unit (EMU) at the Governorate and district level is responsible for the environmental performance of all projects/facilities within the Governorate's premises. The Governorate usually establishes environmental management units at both the Governorate and city/district level. The EMU is responsible for the protection of the environment within the Governorate's boundaries and thus is mandated to undertake both environmental planning and operation-oriented activities. The environmental management unit is mandated to:

- Follow-up on the environmental performance of the projects within the Governorate during both construction and operations to ensure the Project abides by laws and regulations as well as mitigation measures included in its EIA approval. Investigate any environmental complaint filed against projects within the Governorate
- The EMU is administratively affiliated to the Governorate yet technically to the EEAA. The EMUs submit monthly reports to the EEAA with their achievements and inspection results
- The Governorate has a solid waste management unit at the Governorate and district level. The units are responsible for the supervision of solid waste management contracts.

The CAA for medical facilities is MHP. Law 4/1994 stipulates that applications for a license from an individual, company, organization or authority, subject to certain conditions, require an assessment of the expected environmental impacts.

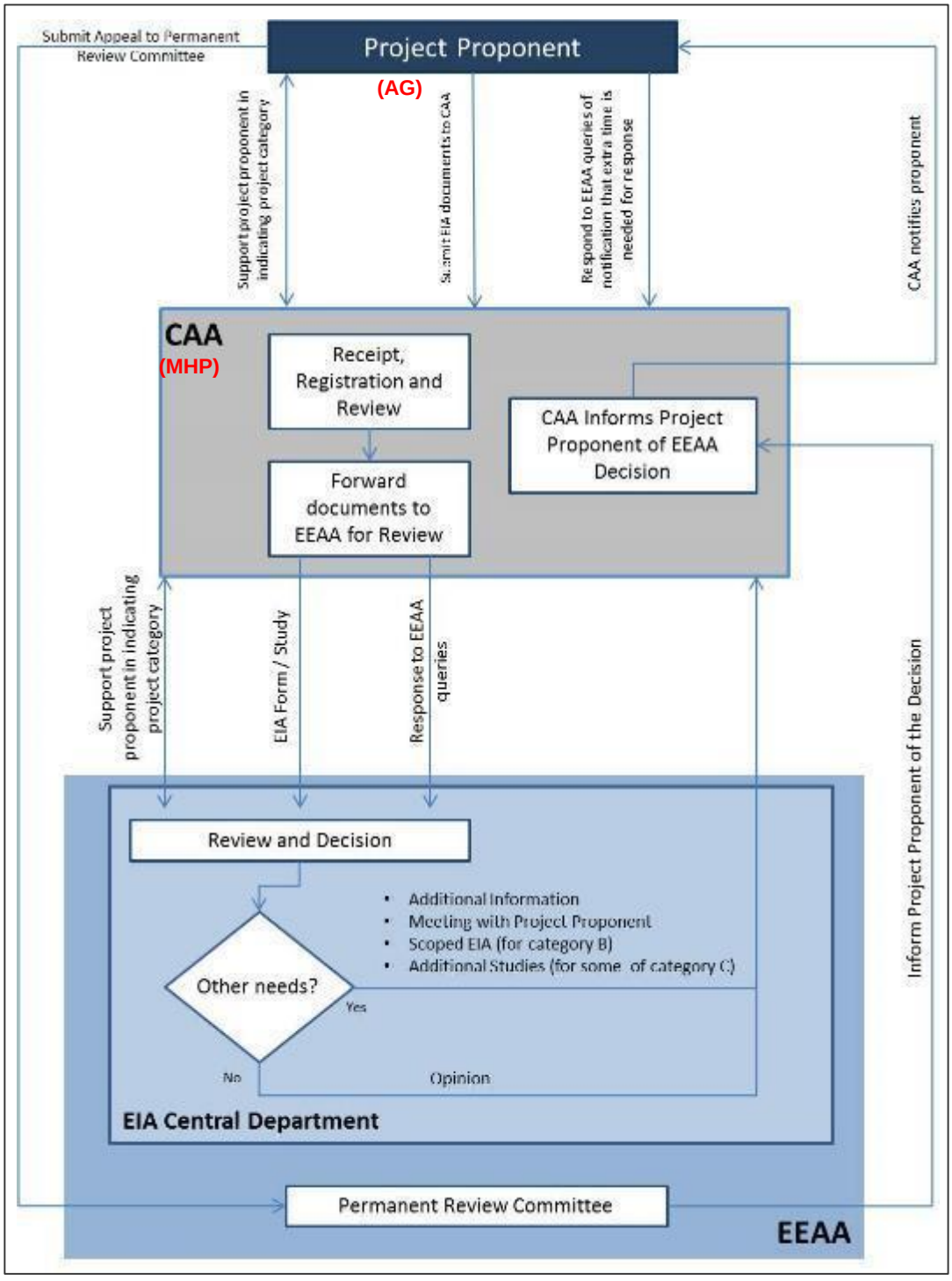
The CAAs are the entities responsible for issuing licenses for project construction and operation. The ESIA is considered one of the prerequisites for licensing. The CAAs are thus responsible for receiving the ESIA forms of studies, reviewing the information contained within these studies, including the location, suitability of the location to the project activity and ensure that the activity carried out within the Project does not pose any significant

negative impacts on the surroundings and that the location does not show any conflicts with the ministerial decrees related to the activity. The CAA forwards the documents to EEAA for review. They are the main interface with the Project proponents in the ESIA system. The CAA is mandated to:

- Provide technical assistance to project proponents such as examine the illustrative ESIA lists to identify the category of the Project, consult with EEAA in case the Project is not included in the ESIA indicative lists, using the criteria described in section 5 of the EIA guidelines to identify the category of the Project. EEAA will have the final decision regarding the classification and should inform the project proponent of its opinion in writing. The CAA also provides the project proponent with ESIA forms for Category A or B; and advises the project proponent regarding the requirements of the form, as well as addressing any questions put forward by the project proponents;
- Ensures the approval of the proposed Project site;
- Receive the ESIA study and forward it to EEAA; and
- Follow-up on the implementation of the environmental and social management plan (ESMP) within the ESIA during construction (before issuing the operation license) and implementation.

After submission of an ESIA for review, EEAA may request revisions in the ESIA report within 30 days, including additional mitigation measures, before issuing the approval of the report. The Project proponent will have the right to issue an appeal within 30 days from its receipt of the EEAA's decision. It should be noted that once the ESIA has been approved, the ESMP as will be presented in the report, will be considered an integral part of the Project; the Project proponent then will be legally responsible for the implementation of that plan, depending on their involvement in construction or operation. It is therefore worth mentioning that the project proponent must ensure that all mitigation measures and environmental requirements described in the ESMP have been clearly referred to in the tender documents for the construction works and construction contracts. The project proponent is responsible for ensuring the contractors implement the ESMP during the construction (or demolition and renovation) and operation phases. Figure 3-1 below presents the process for submitting an ESIA.

Figure 3-1: EIA Process in Egypt



Law 4/1994 also requires that projects should maintain an environmental register for the assessment of their environmental performance and compliance, whereas EEAA should inspect the facilities on an annual basis and follow- up on any recorded non-compliances. A sample outline for an environmental register is presented in Table 3-1.

Table 3-1: Proposed Contents of an Environmental Register

Chapter	Contents
Introduction	Name of the facility, addresses, etc.
Environmental Policy	Provide a copy of the company's environmental policy
General Information	Name of responsible staff
	The time period covered by the register
General Description of the Facility	Activity sector which is followed by the establishment
	Type and amount of actual production and maximum production capacity
	Invested capital and annual return
	The number of employees and year of operation
	Characterization of the facility renovations
	Maps of the emission points, drainage and storage areas
	Maps showing the surrounding environment and the location of the facility
Input	Characterization of raw materials and quantities used annually
	Maximum storage capacity and characterization of storage area
	Sources and water consumption per year and distribution use
	Sources and energy consumption and distribution use
Laws and Regulations that Govern the Facility	Legislation and regulations applicable to the facility
	Attach a copy of the permit and decisions related to the environment of the facility.
	A copy of the correspondence with the EEAA and the administrative authorities concerned
Production Processes and Facilities	Operations per unit productivity
	Characterization of boilers (capacity and fuel used).
	Water treatment plants, water quantity and processing steps
Emissions and Rates	Purpose of carrying out the measurements The measured parameters, and justifications
	Characterization of chimneys, flairs and emissions rates
	Gas Emission rate (m^3/year)
	Contaminated load (tons / year)
	Processing Characterization emissions and efficiency
Effluents	Characterization of wastewater per unit productivity
	Amount of wastewater from the production units m^3/day
	Qualitative Load (kilo contaminated / ton product)
	Characterization and processing units, maps and processing methods
	Used equipment and efficiency of the treatment plant
	Sludge disposal method
Solid Waste Register	Type and quantity of waste volume and disposal methods
	Contents are indicated in the solid waste register subsection
Work Environment	Contaminants in each production unit
	Heat stress, and illuminations for production unit
Self-Monitoring Plan	Frequent monitored pollutants
	Sampling locations (the schedule for sampling)
	Standard Methods used for Analyses
	Personnel responsible for monitoring or reporting

Chapter	Contents
Emergency Plan	General facility Emergency plan
	Oil Spill Contingency plan
Finding and Recommendations	Findings of environmental inspection (site visits) and the recommendations or mitigations in accordance to the findings concerning environment and workplace exposure and modification of monitoring locations as needed for the next environmental updates

3.1.1 Air Quality

The Egyptian standards for ambient air quality (Law No. 4 of 1994 amended by Law No. 9 of 2009 and amendments made to its Executive Regulation dated August 2012, Annex 5) are presented in Table 3-2 below.

Table 3-2: Ambient Air Quality Standards

Pollutant	Area	Maximum Concentration (µg/m³)			
		Hour	8 hours	24 hours	Year
Sulphur dioxide	Urban areas Industrial areas	300 350		125 150	50 60
Carbon monoxide	Urban areas Industrial areas	30 mg/m^3	10 mg/m^3	- -	- -
Nitrogen dioxide	Urban areas Industrial areas	300 300	- -	150 150	60 80
Ozone	Urban areas Industrial areas	180 180	120 120	- -	- -
Total suspended particles	Urban areas Industrial areas	- -	- -	230 230	125 125
PM_{10}	Urban areas Industrial areas	- -	- -	150 150	70 70
$PM_{2.5}$	Urban areas Industrial areas	- -	- -	80 80	50 50
Solid particles measured as smoke	Urban areas Industrial areas	- -	- -	150 150	60 60
Lead	Urban areas Industrial areas	- -	- -	- -	0.5 1
Ammonia	Urban areas Industrial areas	- -	- -	120 120	- -

Annex 6 of the Executive Regulation amended by Ministerial Decree 1095/2011 presents the permissible limits of air pollutants (Table 3-3) for emissions from diesel generators.

Table 3-3: Emission Standards from Diesel Generators

	Total suspended particles	Carbon monoxide	Sulphur dioxide	Nitrogen dioxide	O_2 content
Maximum Concentration (mg/m^3)	100	250	400	600	15 %

Limits for exhaust emissions from vehicles and trucks using gasoline and diesel are presented in Table 3-4 and Table 3-5 below.

Table 3-4: Limits for Exhaust Emissions from Vehicles and Trucks using Gasoline

Manufacture Date	Before 2003		From 2003 to 2009		From 2010 to Present	
Pollutants	HC (PPM)	CO (%)	HC (PPM)	CO (%)	HC (PPM)	CO (%)
Maximum Limit	600	4	300	1.5	200	1.2
Measurements must be taken at RPM 600 to 900						

Table 3-5: Limits for Exhaust Emissions from Trucks and Vehicles using Diesel

Manufacture Date	Smoke Density (km^{-1})
Before 2003	2.8
From 2003 to Present	2.65

3.1.2 Noise

Annex 7 of the Executive Regulation amended by Ministerial Decree 1095/2011 presents the standards for ambient noise emissions, noise limits in the work environment and limits to exposure to noise in the workplace are presented in Table 3-6, Table 3-7 and Table 3-8.

Table 3-6: Ambient Noise Standards

Receptor	Daytime [a] dB (A)	Night [b] dB (A)
Areas sensitive to exposure to noise	50	40
Residential suburbs with weak movement and limited services activities	55	45
Residential communities in towns with commercial activities	60	50
Residential communities located on roads less than 12-meter width including some workshops, commercial activities, administrative activities or recreational activities or amusement parks	65	55
Areas adjacent to roads of minimum of 12 meters width. Or light industrial area with other activities.	70	60
Industrial areas (heavy industries)	70	70
Notes: (a) Daytime from 7 am to 10 pm (b) Night-time from 10 pm to 7 am		

Table 3-7: Noise Limits in the Work Environment

Receptor	Maximum Allowable Level of Sound(dB(A))
Work premises with up to 8 hour shifts with the aim of limiting noise hazards on hearing[(a)]	90

Places of work that require hearing signals and good audibility of speech	80
Places of work for the follow up, measuring and adjustment of operations with high performance	65
Work rooms for activities requiring routine mental concentration	60
Notes: (a) For periods extending longer than 8 hours lower noise limits will be defined	

Table 3-8: Egyptian Limits for Exposure to Noise in the Work Place

Noise Intensity (dB(A))	Period of Exposure per Day (Hours)
> 90-95	4
>95-100	2
>100-105	1
>105-110	0.5
>110-115	0.25

3.1.3 Drinking Water

Limits for drinking water as per Decree 458/2007 are presented in Table 3-9 below.

Table 3-9: Drinking Water Limits.

Parameter	Maximum allowable limit in mg/l unless otherwise stated
Physical Parameters	
Colour	Colourless
Taste	Acceptable
Odour	Odourless
Turbidity	1 NTU
pH	6.5-8.5
Inorganic Substances	
Dissolved salts at 120 °C	1000
Total Hardness as CaCO3	500
Calcium Hardness as CaCO3	350/Ca
Magnesium Hardness as CaCO3	150/Mn
Sulphate (SO4)	250
Chlorides (Cl)	250
Iron (Fe)	0.3
Magnesium (Mn)	0.4
Copper (Cu)	2
Chemical substances which may have an impact on health	
Lead (Pb)	0.01
Mercury (Hg)	0.001
Arsenic (As)	0.01
Cyanide (CN)	0.05
Cadmium (Cd)	0.003
Selenium (Se)	0.01

Parameter	Maximum allowable limit in mg/l unless otherwise stated
Chromium (Cr)	0.05
Ammonia (NH3)	0.5
Nitrate (NO3)	45
Nitrite (NO2)	0.2
Fluorides (F)	0.8
Antimony (Sb)	0.02
Barium (Ba)	0.7
Boron (B)	0.5
Nickle (Ni)	0.02
Molybdenum (Mo)	0.07
Organic Compounds	
Alachlor	0.02
Bentazone	0.03
D.D.T	0.001
2,4 Dichlorophenoxyacetic acid	0.03
Molinate	0.006
Pentachlorophenol	0.009
Chlorine	5
Bromate	0.01
Toluene	0.7
Benzene	0.01
Ethyl Benzene	0.3
Microbiology	
Total Bacteria	Not to exceed 50 cell/1cm^3 (at 37° C for 24 hours) Not to exceed 50 cell/1cm^3 (at 22° C for 48 hours)
Coliform	2 cell/100 cm^3 for one sample only
E. Coli	Free of E. Coli
Salmonella sp	Free of Salmonella sp
Radiation	
α	0.01 picocurie / Litre
β	0.01 picocurie/ Litre

3.1.4 Wastewater

The discharge of wastewater into public sewers is regulated under Law 93/1962, and Ministerial Decree 44/2000 which provides the screening criteria for wastewater quality (Table 3-10). Article 10 of Ministerial Decree 44/2000 states that an existing or proposed facility that generates wastewater and that does not meet the prescribed limits set out in Decree 44/2000, is required to carry out primary and/or secondary treatment (whichever is needed) to ensure that the wastewater discharged is in compliance with the prescribed limits.

Article 11 states that if the competent authority is of the view that the discharged wastewater is hazardous to the sewer systems or treatment plants, it has the right to require the owner or the manager of the facility to treat the

mentioned hazardous materials before discharging into public sewer systems; otherwise, the permit to discharge is annulled.

Article 17 bans any entity which discharges its wastewater into the public sewer system from diluting the concentration of its industrial wastewater by any form as a partial or full substitute of the appropriate treatment needed in regard to Articles 7, 8 and 9 of Law No. 93 of 1962.

Table 3-10: Egyptian Limits for Wastewater Discharge to Public Sewers as per Ministerial Decree 44/2000

Parameter	Limits
pH	6 – 9.5
Temperature (^{0}C)	43
BOD_5 (mg/l)	600
COD (mg/l)	1,100
Total Suspended Solids, TSS (mg/l)	800
Oil and Grease (mg/l)	100
Sulphate (mg/l)	10
Total Nitrogen (mg/l)	100
Total Phosphorus (mg/l)	25
Cyanides (mg/l)	0.2
Phenols (mg/l)	0.05
Settleable Solids after 10 min (cm^3/l)	8
Settleable Solids after 30 min (cm^3/l)	15
Total Heavy Metals (mg/l)	5
Hexavalent Chromium (mg/l)	0.5
Cadmium (mg/l)	0.2
Lead (mg/l)	1
Mercury (mg/l)	0.2
Silver (mg/l)	0.5
Copper (mg/l)	1.5
Nickel (mg/l)	1
Arsenic (mg/l)	2
Tin (mg/l)	2
Boron (mg/l)	1

The use of primary treated wastewater for irrigation purposes is regulated under Law 93/1962, and Decree 44/2000 which provides the screening criteria for wastewater as presented in Table 3-11 below.

Table 3-11: Egyptian Limits for Treated Wastewater Use for Irrigating Timber or Ornamental Trees

Parameter	Limits
Total Coliform per 100 ml	Unspecified
BOD_5 (ppm)	300
COD (ppm)	600
Total Dissolved Solids (ppm)	2,500
Total Suspended Solids (ppm)	350
Nematodes (eggs/filter)	5
Sodium Absorption (%)	25
Chlorides (ppm)	350
Boron (ppm)	5
Lead (ppm)	10
Cadmium (ppm)	0.05
Manganese (ppm)	0.2

3.1.5 Waste

Law No. 202/2020, and its executive regulations regulating waste management in Egypt.

Article 37 of Law No. 4 of 1994, articles 38 and 39 of its Executive Regulations, and Law No. 38 of 1967, amended by Law No. 31 of 1976, deal with the collection, transportation, and safe disposal of solid wastes.

Article 39 of Law No. 4 of 1994 and Article 41 of its Executive Regulations requires precautions to be taken during any digging, construction, demolition activities, or transport of resulting waste, in order to avoid air pollution.

Articles 29 to 32 of Law No. 4 of 1994 provide regulations for the handling and storage of hazardous materials, including hazardous waste. Article 33 of Law No. 4 of 1994 specifies that all precautions must be taken when handling or storing hazardous material in any form (i.e. gaseous, liquid, or solid).

Articles 34 to 36 address the responsibility of companies in ensuring safety of workers against chemical risks. Articles 26, 31, and Decree No. 211 of 2003, specify conditions for the storage of flammable material, fuel, raw material, products and equipment.
Article 36 specifies that the workers should be made aware through written or oral instructions of the hazards related to the chemicals they are handling; they should also be trained on proper handling procedures.
Articles 85, 88, and 95 state the penalties for non-compliance with the requirements of the law,
Articles 102, and 104 are related to inspection authorities.

According to Law 4/1994, Article 33 “the owner of an establishment whose activities produce hazardous waste pursuant to the provisions of this law shall be held to keep a register of such waste indicating the method of disposing thereof, and the agencies contracted with to receive the hazardous waste. The executive regulations shall determine the data to be recorded in the said register and the EEAA shall be responsible for following up the register to ensure its conformity with the facts”. A sample outline for a hazardous waste register is presented in Table 3-12 below.

Table 3-12: Contents of a Hazardous Waste Register

Chapter	Contents
General Information	Name of the facility, address, telephone, etc.

Chapter	Contents
	Name of responsible staff
	The time period covered by the register
Hazardous Materials	A list of hazardous substances used and the environmental characteristics and the producer
	Annual consumption of hazardous materials
	Description of storage containers
	Characterization of storage area
	Methods of handling hazardous materials
	Methods of disposal of empty containers
Hazardous Waste	A description of the generated hazardous waste in each unit and the total quantities
	Type and quantity of waste (tons / year) and size.
	Storage area of hazardous waste
	Description of storage containers
	Disposal Methods
Emergency Response Plan	Safety equipment and procedures to reduce the risk
	Means for extinguishing the fire and dealing with spills
	Modes of transport and disposal
Oil Spill Contingency Plan	Present the oil spill contingency plan
Monitoring Program	Self-Monitoring Plan
Permits and Licenses	Make all licenses available onsite. If not available, make copies and a permit register available.
Finding and Recommendations	Findings of the environmental inspection and the recommendations or mitigations in accordance to the findings concerning environment and workplace exposure and modification of monitoring locations as needed for the next environmental updates

3.2 Biodiversity

Agricultural Law 53/1966, amended by Law 116/1983, was the main legislation protecting wildlife, especially birds, before the creation of Law 102/1983 on protectorates and Law 4/1994 on the environment. Law 53/1966 and its executive regulations still provide lists of legally protected wildlife species.

The main law protecting natural protectorates is Law 102/1983. The law was created to allow for the protection of areas of special natural attractions, natural landscape, natural habitats and wildlife. The Ministerial Decree 1067/1983 designates the EEAA as the authorized administrative body charged with the implementation of Law 102/1983.

Law 102/1983 states (Article 1) that a Natural Protectorate is defined as: “Any area of Land, or coastal or inland water characterized by flora, fauna, and natural features having cultural, scientific, touristic or aesthetic value”.

The law preserves such areas by prohibiting activities susceptible to harm the designated natural protectorates (Article 2), either within the protectorate, or even within the surrounding area (Article 3).

In addition, Article 28 of Law 4/1994 and Article 23 of its executive regulations, forbid the hunting, shooting or catching the types of birds and wild animals specified in Annex 4 of Law 4/1994. The law also forbids damaging the nests or the eggs of these birds.

This provision shall apply to natural reserve areas; and in areas where animals and birds are threatened with extinction, including:

- Nature reserves as defined in prime ministerial decrees issued in implementation of Law 102/1983.
- Regions designated in the international conventions signed and ratified by Egypt.
- Any other regions determined in a decree of the competent authority in coordination with the EEAA.

The protection granted to the animal species listed in Annex 4 of Law 4/1994 extends to:

- Animal species listed by Ministerial Decree 28/1967 for Article 117 of Law 53/1966, amended by Law 116/1983.
- Other animal species protected by international conventions to which Egypt is a party.
- Any other birds or animals for which a decree shall be issued by the Minister of Agriculture with the agreement of the EEAA.

At this stage, it is not expected that natural protectorates will come within the area of influence of the Project.

3.3 Labour and Working Conditions Legal Framework

The labour legal framework in Egypt comprises an extensive series of laws and decrees that protect and safeguard workers' rights and is presented in the following subsections.

3.3.1 Workers' Rights

Article 34 of Law 12/2003: The National Council for Wages undertakes to set out minimum wage levels taking into consideration the cost of living and to strike a balance between wages and prices. The Council also sets out the minimum annual increase, which must not be less than 7% of the basic salary that is used to calculate the social insurance.

Article 54 of Law 12/2003: Employees are entitled to sick leave confirmed by the concerned medical authority and are entitled to compensation out of their salary, as stipulated in the Social Insurance Law.

Article 85 of Law 12/2003: Overtime hours shall be agreed upon in the employment contract. The compensation for the overtime hours may not be less than the original compensation that the employee is entitled to plus 35% for the day working hours and 70% for the night working hours. In the event that overtime hours are worked on a public holiday then the employer will pay the employee double the salary for that day. In all cases actual working hours are not to exceed ten hours per day for normal jobs with the exception of physically strenuous jobs identified in decree 122/2003.

Article 120 of Law 12/2003: Race, sex, social status, family obligations, pregnancy, religion or political views are insufficient grounds for termination of the employment contract. The same rule applies for workers' affiliation to union organizations, filing complaints within the work place and taking entitled holidays.

The new Social Insurance Law 148/2019 extended social insurance protection to new groups of employees and unified all the previous social insurance laws.

3.3.2 Child Labour

Law 12/1996: Children shall not be employed before attaining the age of 14, nor shall they be provided with training before they attain the age of 12. And for Physically Strenuous occupations the age should be at least 17 before being employed.

3.3.3 Discrimination

Articles 35 and 120 of Law 12/2003: Discrimination based on sex, origin, language, religion or creed either in wages or the termination of the employment contract is prohibited.

Law 39/1975: Regarding the reintegration of disabled individuals prohibits discrimination on grounds of disability. Accordingly, the law ensures fair rehabilitation and integration of disabled individuals into the working environment, through institutions and authorities established by the Ministry of Social Affairs aiming to provide rehabilitation services to such individuals.

Article 9 of Law 39/1975: Imposes a legal obligation on companies with fifty or more employees to have the number of disabled employees equal to 5% of its overall workforce. The employer shall employ disabled employees based on the Manpower's Office recommendation in this regard. The law also provides for imposition of fines and/or imprisonment on employers for not complying with the subject Article.

3.4 Occupational Health and Safety (OHS) Legal Framework

Occupational Health and Safety in Egypt is regulated under Law 12/2003. Its revised version issued and published in the Official Gazette No. 14 (rep.) on 7th April 2003, entered into force on the 7th of July 2003.

The objective of Law 12/2003 is to organize employment relations, clarify the duties and rights of the parties to the employment agreement and to ensure health and safety at the workplace. A specific section (Book V) is dedicated ensuring the health and safety of the working environment.

The health and safety provisions of the law apply to all establishments in the private and public sectors, civilian government units, local (municipal) government services and public authorities as per Article 203. It requires prior authorization and licensing to set up and operate an industrial, commercial or other establishment as per Article 204 to 215, defined as a business or undertaking in the public or private sector (Article 203).

3.4.1 Role and Responsibilities of Employers

Law 12/2003, Article 208, stipulates that the employer takes all necessary measures to ensure health and safety at the workplace by addressing mechanical, physical, chemical and biological hazards. Article 216 requires that workers undergo medical examinations prior to commencing employment (pre- employment medical examination). Article 219 requires that periodic medical examinations are completed for workers exposed to the risk of occupational disease. Employers are required to provide medical attention and treatment depending on the number of workers employed as per Article 220.

It also lays down the principle of establishing an OHS Committee. The composition and function of the OHS Committee is precisely defined in Decree No. 134. Workers are represented within OHS Committees in establishments employing more than 50 workers (Decree 134/2003 replacing 116/1991). The law stipulates that this committee shall study working conditions and causes of accidents and diseases. It shall also specify preventive measures according to Article 227. Decree No. 134 also stipulates that appropriate training shall be provided to members of the OHS Committee.

3.4.2 Role and Responsibilities of Workers

Every worker is required to follow protective measures and observe safety precautions set by the employer. The employer has the right to take disciplinary action against any worker who does not follow the prescribed safety precautions as per Article 218 of the law, Article 57 of Law 79/1975, and Decree No. 48/1967.

3.4.3 Executive Ministerial Decrees

In addition to Law 12/ 2003, protection of workers against hazardous processes, machinery and equipment, hazardous chemicals, physical and biological agents are regulated by three major decrees; Decree No. 126, No. 211 and No. 134.

Decree No. 126/2003 (replacing Ministerial Decree 75/1993) defines procedures and forms for notification of accidents and diseases at work.

Decree No. 211/2003 (replacing Ministerial Decree 55/1983) specifies the necessary conditions required for a safe working environment with respect to physical, mechanical, electrical, chemical, biological and other hazards. Special chapters provide “Maximum Allowable Concentrations” for more than 600 chemical agents in the working environment, safe levels of physical parameters (heat and cold stress, noise, vibration, illumination, radiation, static electrical fields, classification of jobs according to physical workload, etc.), and a list of suspected chemical carcinogens (86 agents).

Decree No. 134/2003 (replacing Ministerial Decree 116/1991) defines the type of industrial and non-industrial enterprises which should have an occupational health and safety (OHS) department and a joint OHS Committee. It also regulates training in occupational safety and health for workers/managers involved with OHS in the enterprise. The decree stipulates that every establishment or a branch thereof, at which 50 or more workers are employed, shall assign the industrial safety task to an OHS Department and to a joint OHS Committee, where some technicians and specialists are working as full-time OHS controllers and supervisors. The main functions of OHS technicians and specialists are: 1) periodic inspection of the workplace; 2) to investigate accidents and determine its causative factors; 3) to investigate the incidence of occupational diseases and determine their causative factors; 4) to maintain statistical information; 5) to check firefighting equipment and follow up protective measures; 6) to participate in safety committee meetings, 7) to specify preventive measures (Article 227).

The Law 12/2003 sets out the roles and responsibilities of the employers, who should take all necessary measures to ensure health and safety at the workplace regarding mechanical, physical, chemical and biological hazards (Article 208). The law also requires the medical examination of the workers before employment, i.e., during pre-placement (Article 216), first aid measures, medical attention and treatment depending on the number of workers employed (Article 220), and periodic medical examination of those workers who are exposed to the risk of any occupational diseases (Article 219). Employers should inform workers of the dangers they are exposed to in case they do not conform to the protective measures and should provide them with personal protective equipment (Articles 208 - 215).

The roles and responsibilities of workers set out by the Law involve their obligation to follow protective measures and observe safety precautions, as these are specified by the employer. The employer is entitled to take disciplinary actions against workers who do not follow the safety precautions as prescribed (Article 218 of Law 12/2005, Article 57 of Law 79/1975, and Ministerial Decree 48/1967).

3.4.4 Compensation: Health Insurance Legislation & Organizations

Law 79 (1975), the Social (and Health) Insurance Law as amended by Law No. 25 (1977) is implemented by the Ministry of Insurance and Social Affairs. In addition to evaluation of disability, the Health Insurance Organization is also responsible, according to Law 79/ 1975 and Law 12/ 2003 (Article 216), to carry out both pre-placement and periodic medical examinations.

3.5 Rights to Healthcare and Comprehensive Health Insurance

3.5.1 Egypt’s 2014 Constitution

Egypt’s 2014 Constitution affirmed the universal right to healthcare, where Article 18 states that every citizen is entitled to health and to comprehensive health care with quality criteria. The state guarantees to maintain and

support public health facilities that provide health services to the people, and work on enhancing their efficiency and their fair geographical distribution across Egypt.

The state commits to the following:

- Allocate a percentage of government expenditure that is no less than 3% of Gross Domestic Product (GDP) to health. The percentage will gradually increase to reach global rates.
- The establishment of a comprehensive health care system for all Egyptians covering all diseases. The contribution of citizens to its subscriptions or their exemption therefrom is based on their income rates.
- Denying any form of medical treatment to any human in emergency or life-threatening situations is a crime.
- Improving the conditions of physicians, nursing staff, and health sector workers, and achieving equity for them.
- Encourage a partnership program between the public and private sectors in Public/Private Partnerships (PPPs) to increase investment in healthcare service provision.
- All health facilities and health related products, materials, and health-related means of advertisement are subject to state oversight.

3.5.2 Law 2/2018 on Universal Health Insurance

In December 2017, the Egyptian Parliament approved the Comprehensive Health Insurance Law drafted earlier in October by the government following discussions with the Health Committee's report on the law. The new system will be implemented between 2018 and 2032. The law will provide free health care coverage extension to all citizens who cannot afford to pay for their medical treatment, accounting for 30-40 percent of the population. In addition, subscription would be obligatory for those who can afford covering treatment costs for all diseases[8].

Amongst the most important articles of the new health insurance law are the following:

Article 4 is concerned with the establishment of the General Authority for Comprehensive Social Health Insurance (GACSHI) to be an independent legal entity with an independent and separate budget. The authority will be under the primary supervision of the Prime Minister with a special administration.
Article 5 is concerned with the formation of the Board of Directors of the Authority, and that it states that the term of the Council is four years, to be renewed once.
Article 6 stipulates that the Board of Directors of the Authority is the supreme authority of its affairs as well as setting the necessary policies required to accomplish its goal.
Article 7 provides for the appointment of an executive director for the authority to administer it, where his term of office will be four years, to be renewed once.
Article 8 stipulates that all administrative and financial assets – except medical assets – of the General Authority for Health Insurance along with its branches and entities associated to health ministry shall be affiliated to the GACSHI.
Article 9 has some points on the sources of funding of the Authority.
Article 10 states that GACSHI shall be responsible for following up the medical treatment of the insured patients in case they received a medical treatment at one of the medical entities, which are not registered in the GACSHI. Insured patients shall have the right to choose the treatment entities in case of emergency at one of the non-contracting medical entities, in such cases the GACSHI shall have the right to regulate the refund expenses in accordance with the applicable price regulations of the Authority.
Article 11 stipulates that the Authority shall have the right to exclude any service providers in cases where service providers are less focused towards the citizens.
Article 12 states that in the case of injury of the insured during work or because of work, the employer shall inform the GACSHI as soon as the injury takes place.

[8] Egypt, Arab Republic of - Transforming Egypt's Healthcare System Project: environmental assessment: Environmental and social management framework (English). Washington, D.C.: World Bank Group. http://documents.worldbank.org/curated/en/594471524601888530/Environmental-and-social-management-framework

Article 13 is concerned with the issuance of disability certificates resulting from the incidence of any disease and its percentage.
Article 14 states that the GACSHI is obliged to submit performance reports regarding its financial position and semi-annual financial statements to the Cabinet and House of Representatives at least once a year.
Article 40 stipulates that the sources of funding would include fees paid by citizens (i.e., subscription fees), donations, tax on cigarettes, and additional funding sources.
Article 42 states in the case of a delay in payment of contributions, an additional annual amount shall be imposed on the individual as a fine for the delay period. The additional amount shall be calculated in accordance with the rules provided for in the Civil Code.
Article 44 sates that the financial status of the system shall be examined at least once every four years by one or more experts in the field of health who shall be assigned by the Prime Minister based on the nomination of the Minister of Finance and Minister of health.
Article 48 stipulates that the use of comprehensive social health insurance services requires that the beneficiary be a participant in the system and is paying their share. Individuals who do not join the universal health insurance from the beginning but decide to do so later will be obliged to pay the arrears via a one-off payment or in instalments, except in case of an emergency, as defined by the authority.
Article 49 states that those insured shall bear their share and the employer's share during the duration of the internal or external loan and the unpaid special leave and shall be handed directly to the Authority except for childcare leave, scholarships, sabbatical leave and scientific assignments granted to the administrative units of the State.
Article 52 specifies that the bodies established under this law shall have an independent budget and shall begin their financial year at the beginning of the fiscal year of the State and shall end by the end of each year.
Article 53 determines that the provisions of the Law shall be suspended during the period of compulsory conscription, retention and summoning of the armed forces.
Article 59 determines that the Authority may provide its services to foreign residents or in accordance with the regulations it establishes, taking into consideration the requirement of reciprocity.
Articles 62, 63, and 65 state the penalties for non-compliance with the requirements of the law.

The new law mandates establishing three new administrative bodies to manage this new system, and they are as follows:

1. The Social Health Insurance Authority, a legally independent body with its self-governing budget under the supervision of the Prime Minister, will be responsible for funding the service.
2. The Healthcare Authority will be handling healthcare services in primary healthcare units and hospitals.
3. The Quality Control body will be appointed to ensure all healthcare services and infrastructures meet international standards (handle accreditation of service units and providers, quality of service, and supervision of operations).

Moreover, in March 2018, Minister of Communications cooperated with the Ministry of Health and Population to automate the comprehensive health insurance system in Egypt. Thus, provide citizens with unified smart cards that include all necessary information required for health insurance system, such as medical records, in accordance with the cooperation protocol.

3.6 Law No. 51/1981 Amended by Law 153/2004, and Its Executive Regulations

Law No. 51/1981 regulates healthcare facilities. It defines the minimum requirements that healthcare facilities have to abide by as well as the sanctions for those violating these requirements.

3.7 Information Disclosure and Stakeholder Engagement Legal Framework

3.7.1 Labour Law 12/2003

According to the Law 12/2003 article 48, the organization should develop a clear internal HR policy which organizes the working regulations including day offs, break times and other regulations which should be clearly disclosed to workers in their mother language. Article 95: indicates that working regulations for women should be publicly disclosed for all workers. Article 102 indicates that working regulations for children under 16 should be clearly disclosed to all workers.

3.7.2 Environmental Law 4/1994

Law 4/1994, and its amendments, specifies that prior to granting environmental and operation approvals of any proposed project, public consultations must be undertaken for Category C projects. Public consultation should be organized to include institutional stakeholders, such as representatives of the EEAA and its regional branches, related governmental authorities, the Governorate where the Project is located, local parliaments and influenced groups of nearby institutions or residents. Other stakeholders may be included, such as NGOs and universities.

According to the EEAA's second and latest edition of the "Guidelines of Principles and Procedures for Environmental Impact Assessment" published in 2009, the phases in which consultation activities occur include the ESIA scoping phase and the ESIA public disclosure phase.

Consultations during the ESIA scoping phase are aimed at identifying the key aspects and impacts that will be addressed and analysed in the ESIA study, according to the scale of the Project and the affected environment. During this process, it is important to involve the concerned parties/stakeholders in the identification of these key aspects and impacts and seek their opinion in order to ensure that the ESIA study will address these elements in an integrated manner. Consultation in this phase could be undertaken through different forms, such as:

- Meetings held with each concerned party, individually. This is performed with the delegated representative(s) of the concerned party. It is worth noting that the project proponent is responsible for contacting the concerned parties to request for a meeting, while the concerned party should indicate the time of this meeting and the delegated representative(s).
- A unified meeting held with all concerned parties. It should be noted that the project proponent is responsible for inviting the concerned parties/stakeholders.

The ESIA public disclosure phase has the objective of openly announcing the study's results and providing the concerned parties/stakeholders with the opportunity to be reassured that all points raised during the scoping consultation meetings have been fully addressed in the study and be comfortable with the mitigation measures proposed, to which the project proponent is committed. A public hearing should be held, which should be attended by representatives of all concerned parties. It is important to provide the participants with adequate time prior the meeting to review the study's results and submit their comments. This is fulfilled through the dissemination of the executive summary of the study in Arabic, at least 15 days in advance of the second public consultation meeting. The meeting should be publicly announced at least 2 weeks before the specified date of the public consultation. The consultation should be held in a location easily accessible by all stakeholders. It is the responsibility of the concerned parties/stakeholders to delegate their representatives that will attend this consultation meeting. During this second consultation meeting, the following elements should be presented:

- The results of the study with reference to the points raised by the concerned parties during the ESIA scoping phase; and
- The mitigation measures to which the project proponent is committed so that the negative impacts will be prevented or reduced to reasonable levels.

According to the EEAA's "Guidelines of Principles and Procedures for Environmental Impact Assessment" (2009), projects falling under the Scoped B category do not require public consultations.

3.8 Traffic

Traffic Law 66/1973, amended by Law 121/2008, deals with traffic planning during construction of projects. Law 140/1956 on the utilization and blockage of public roads and Law 84/1968 concerning public roads govern the utilization or temporary obstruction of public roads. The Executive Regulations of Law 140 contain specifications for the management of construction and demolition debris. The law also allows the competent administrative authority to charge a fee for occupation of public ways.

3.9 International Conventions and Agreements

Egypt is a signatory to several regional and international conventions, treaties and agreements addressing environmental and social protection, labour rights and the conservation of nature. Relevant conventions, treaties and agreements include the following:

- Convention Relative to the preservation of Fauna and Flora in their natural state.
- International Convention on the Protection of Wetlands.
- Convention for the Prevention of Marine Pollution from Land-based Sources.
- Convention on the Conservation of Migratory Species of Wild Animals..
- Basel Convention on Transboundary Movements of Waste.
- Convention on Biological Diversity.
- The UN Framework Convention on Climate Change. Kyoto Protocol..
- Right to Organise and Collective Bargaining Convention.
- Convention on Forced or Compulsory Labour.
- Freedom of Association and Protection of the Right to Organise Convention.
- Abolition of Forced Labour Convention.
- Discrimination (Employment and Occupation) Convention.
- International Covenant on Economic, Social and Cultural Rights.
- International Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families.
- Convention concerning the Prohibition and Immediate Action for the Elimination of the Worst Forms of Child Labour.
- Convention for the Protection of Workers against Occupational Hazards in the Working Environment due to Air Pollution, Noise and Vibration.

4 AFRICAN DEVELOPMENT BANK'S OPERATIONAL SAFEGUARDS

4.1 AfDB's Operational Safeguards Applicable to the Project

Table 4-1 below presents AfDB's Operational Safeguards (OS) as stated in AfDB's Safeguards and Sustainability Series Volume 1 - Issue 1 (Dec. 2013): Integrated Safeguards System.

Table 4-1: Applicable AfDB OSs

AfDB Operational Safeguard	Objectives	Applicable to the Project (Y/N)
Operational Safeguard 1 – Environmental and Social Assessment	• Mainstream environmental, climate change, and social considerations into Country Strategy Papers (CSPs) and Regional Integration Strategy Papers (RISPs); • Identify and assess the environmental and social impacts and risks— including those related to gender, climate change and vulnerability—of Bank lending and grant-financed operations in their areas of influence; • Avoid or, if avoidance is not possible, minimise, mitigate and compensate for adverse impacts on the environment and on affected communities; • Provide for stakeholders' participation during the consultation process so that affected communities and stakeholders have timely access to information in suitable forms about Bank operations, and are consulted meaningfully about issues that may affect them; • Ensure the effective management of environmental and social risks in projects during and after implementation; and • Contribute to strengthening regional member country (RMC) systems for environmental and social risk management by assessing and building their capacity to meet AfDB requirements set out in the Integrated Safeguards System (ISS)	**Applicable** • Project is Category 2 and requires the completion of an ESIA and preparation of ESMP
Operational Safeguard 2 – Involuntary Resettlement: Land Acquisition, Population Displacement and Compensation	• Avoid involuntary resettlement where feasible, or minimise resettlement impacts where involuntary resettlement is deemed unavoidable after all alternative project designs have been explored; • Ensure that displaced people are meaningfully consulted and given opportunities to participate in the planning and implementation of resettlement programmes; • Ensure that displaced people receive significant resettlement assistance under the project, so that their standards of living, income-earning capacity, production levels and overall means of livelihood are improved beyond pre-project levels; • Provide explicit guidance to borrowers on the conditions that need to be met regarding involuntary resettlement issues in Bank operations to mitigate the negative impacts of displacement and resettlement, actively facilitate social development and establish a sustainable economy and society; and • Guard against poorly prepared and implemented resettlement plans by setting up a mechanism for monitoring the performance of involuntary resettlement programmes in Bank operations and remedying problems as they arise.	**Not applicable** • The Project will not result in the loss of lands, neither resettlement of population or land acquisition. The Project infrastructure institutions are localized in existing vacant lands have been legally purchased by Andalusia.
Operational Safeguard 3 – Biodiversity, Renewable Resources and Ecosystem Services	• Conserve biological diversity and ecosystem integrity by avoiding or, if avoidance is not possible, reducing and minimising potentially harmful impacts on biodiversity; • Endeavour to reinstate or restore biodiversity, including, where some impacts are unavoidable,	**Not applicable** • The Project is not located in any biodiversity sensitive areas. The nature of the Project does not require the use of natural resources

AfDB Operational Safeguard	Objectives	Applicable to the Project (Y/N)
	through implementing biodiversity offsets to achieve "not net loss but net gain" of biodiversity; • Protect natural, modified, and critical habitats; and • Sustain the availability and productivity of priority ecosystem services to maintain benefits to the affected communities and sustain project performance.	
Operational Safeguard 4 – Pollution Prevention and Control, Hazardous Materials and Resource Efficiency	• Manage and reduce pollutants resulting from the project— including hazardous and nonhazardous waste—so that they do not pose harmful risks to human health and the environment; and • Set a framework for efficiently using all of a project's raw materials and natural resources, especially energy and water	**Applicable** • Project will result in waste, wastewater, air and noise emissions during demolition and construction activities. Project involves the demolition and construction of buildings, and will require the use of hazardous materials in all phases of the Project. The Project will also result in the generation of hazardous waste throughout its various phases.
Operational Safeguard 5 – Labour Conditions, Health and Safety	• Protect workers' rights; • Establish, maintain, and improve the employee–employer relationship; • Promote compliance with national legal requirements and provide supplemental due diligence requirements where national laws are silent or inconsistent with the OS; • Align Bank requirements with the ILO Core Labor Standards, and the UNICEF Convention on the Rights of the Child, where national laws do not provide equivalent protection; • Protect the workforce from inequality, social exclusion, child labour, and forced labour; and • Establish requirements to provide safe and healthy working conditions.	**Applicable** Project activities will require the recruitment of skilled and unskilled labour. Activities undertaken will pose potential health and safety risks to patients, doctors, medical and non-medical employees and surrounding community.

4.2 Gap Analysis

A review of both the Egyptian national framework and the AfDB's requirements to identify the major gaps between them, and the major gaps identified were as follows:

- Category B ESIAs are not required to have stakeholder engagement activities by the Egyptian law. However, AfDB requires undertaking stakeholder engagement activities
- Egypt has demonstrated to have strong OHS regulations, while the OSs hasn't.

5 PROJECT DESCRIPTION

5.1 Project Rationale

The Egyptian health-care system faces numerous obstacles in enhancing and ensuring the Egyptian people's health and well-being. Not only does the system have to deal with diseases linked to poverty and a lack of education, but it also has to deal with new diseases and illnesses linked to modern, urban lifestyles. The population's demands for more and better treatment, as well as advanced health care technologies, are rising as global communications and commerce become more accessible.

The demographic burden on Egypt's health system is increasing due to a high birth rate mixed with a longer life expectancy. With approximately 100 million people living within its boundaries and another 10 million residing abroad, Egypt is one of the most populated Arab countries in the world. With a population growth rate of 2.5 percent per year, demand for physical and social infrastructure, such as healthcare and education, is on the rise. Egypt's healthcare sector's long-term success will be determined by how rapidly it accepts new technology and innovations based on global research and development (R&D) and adopts a data-driven, patient-centric, and results-oriented approach to the industry.

It is estimated that by 2030, Egypt will require approximately 38,000 new beds (based on Egypt's ratio of 1.3 beds/1,000 population) with an estimated investment of US$8 to 13 billion, and up to 120,000 new beds (based on the MENA ratio of 1.9 beds/1,000 population) with an estimated investment of US$25 to 40 billion, with the public sector funding half of these investments. The investment needed to close this gap was calculated based on the current cost of construction with fitouts for a Grade A hospital, which is in the range of US$ 1,500/sqm to US$ 2,000/sqm (average US$1,750/sqm), while the gross area per bed ranges from 90 sqm to 120 sqm (average 115 sqm), with investment in medical fitouts ranging from US$80,000 to US$100,000 per bed. Furthermore, since “Doctor’s Clinics” are one of the popular services in Egypt, it is estimated that the country will require approximately two million square metres of medical clinic space by 2030, at a cost of US$1 billion, providing opportunities for developers to develop and sell clinics to doctors/investors[9].

There is a clear gap in the Egyptian healthcare sector and the AOH Project will contribute towards bridging this gap. The Project will bring new technology and expertise to provide world-class health care and medical services for the community. Not only will the hospital provide in-patient care, but it will also include out-patient clinics, serving both deficiencies highlighted by Colliers report.

5.2 Project Objective

The project’s development objective is to contribute to enhancing the health and wellbeing of the community in Cairo and especially the residents of the Maadi district. This will be achieved by establishing a well-equipped hospital to cater world-class and reliable medical services with high standard health services. The project beneficiaries are doctors, nurses, administrators, patients, and the people of Egypt in general. The direct project beneficiaries are doctors, nurses, administrators, patients in the district and surrounding districts.

5.3 Project Location

The Project is located in the Maadi district in Cairo, Egypt at the following coordinates: 29° 58' 24.3" N and 31° 16' 53.6" E. The Project location is present in Figure 5-1.

[9] The information presented in the section was obtained from Colliers Egypt Healthcare Overview: Research and Forecast Report 2021/2022, accessed at: https://www.colliers.com/en-eg/research/cairo/egypt-healthcare-overview

Figure 5-1: Project Location (obtained from Google Earth, accessed on May 12th 2022)

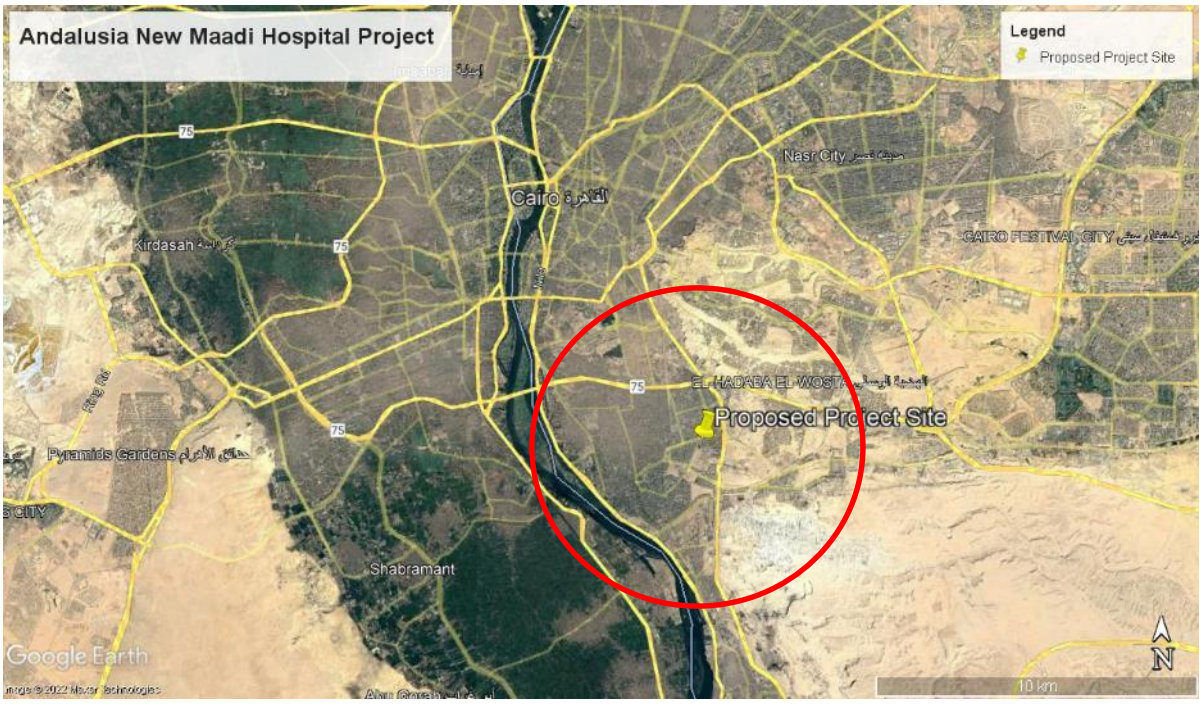
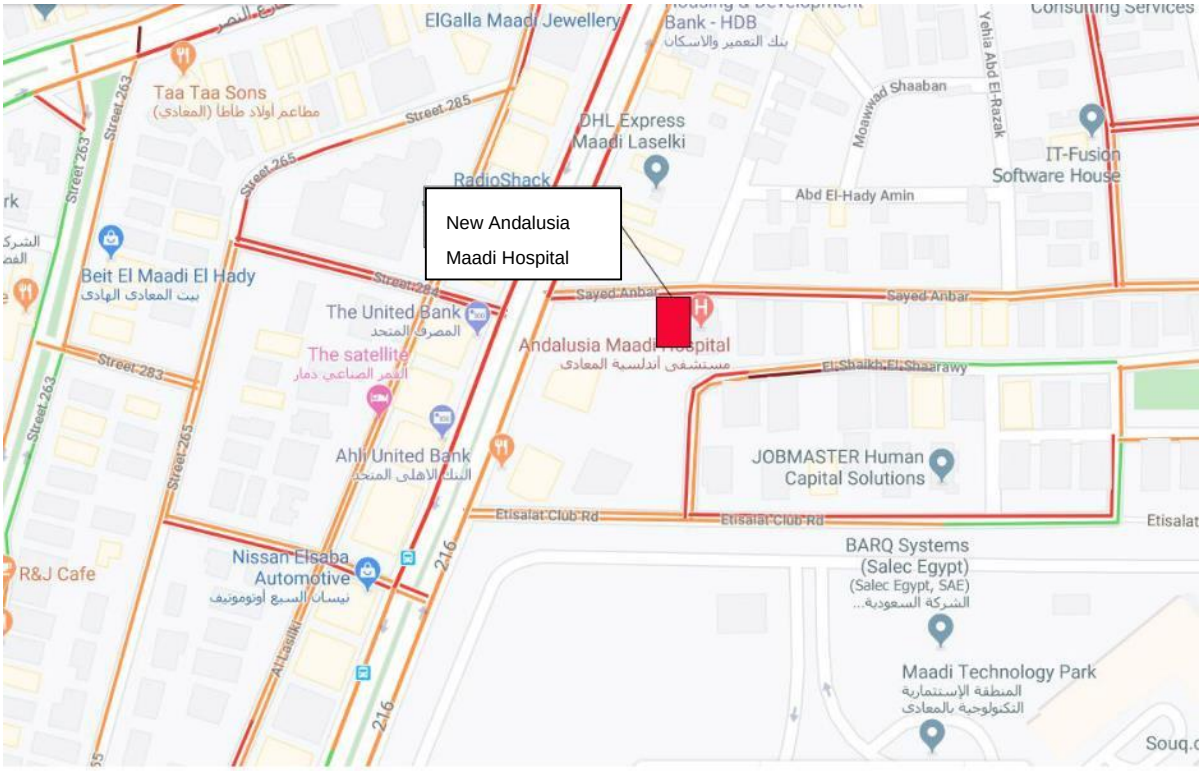


Figure 5-2 Project Location and Main Surroundings (obtained from Andalusia Group)



Owner / Operator			
Andalusia Group			
Street(s)	**City**	**Governorate**	**Country**
Sayed Anbar Street	Maadi	Cairo	Egypt

Aerial Photograph: Google Earth Professional (accessed 30 March 2022)
N: 29° 58' 24.3"
E: 31° 16' 53.6"

ACTUAL PHOTOS

Photo 1:

Photo 2:

REAL ESTATE INFORMATION

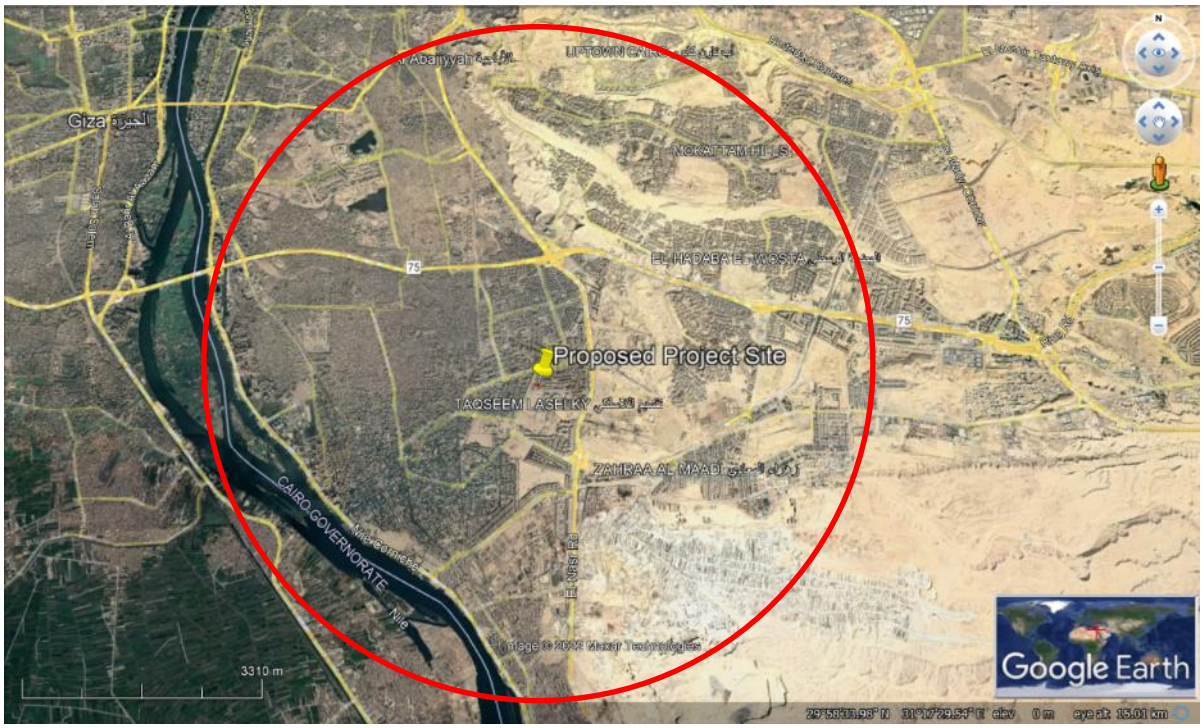
Associated Facilities	No associated facilities were identified during the site visit.

Ownership	Andalusia is the sole owner of the site according to the land agreement letter shared.	
Area of Site (m^2)	609	
Area of Buildings (m^2) (footprint)	4,165	
No. of Buildings	An expansion of the existing building is planned for construction.	
Zoning	The site is located in the Maadi district in a residential area.	
Site Surrounding	**North:**	Sayed Dawood Street.
	East:	The existing Andalusia Maadi Hospital.
	South:	Parking area.
	West:	Andalusia Clinics Building (not operational yet)
Site Setting	The site is located in the eastern part of the Maadi district in Cairo, Egypt. No industrial areas were identified within the vicinity of the site. Commercial and recreational establishments such as restaurants, supermarkets, shops, banks and the Maadi Technology Park are present within less than a km from the site. The site is neither located in a nature protection area nor in a water protection area. The site is also not located in a designated flooding area. The Project site can be characterized as a residential-commercial area in a desert climate with a relatively flat ground surface.	
Infrastructure and utilities	The site is not currently connected to the public water supply network, public sewage network or public electricity grid but is anticipated to connect to it once operational. Connections will be completed by the municipality upon the submission of a request to connect to the network by the developer.	
HISTORICAL INFORMATION		
Date of First Site Development	The site is currently a side street/ parking area for residents of the area.	
Site History	The According to site personnel, and based on visual observation no accidental release of chemicals or other incidents which may have had the potential to cause significant material subsurface impacts have occurred at the site to date.	
Surrounding Area History:	The site is surrounded by residential and commercial units. The history of these units is unclear.	

5.4 Project Area of Influence

The area of influence of the Project activities has been determined as 5 km in each direction from the Project location as indicated by the red circle in the figure below. localities and dwellings immediately surrounding the Project in its area of influence are discussed in the following section.

Figure 5-3 Project's Area of Influence



5.5 Project Neighbourhood Description

The site is located in the eastern part of the Maadi district in Cairo, Egypt. The site is surrounded by different types of localities, dwellings, and empty lands which have potential for future developments (Figure 5-4). No industrial areas were identified within the vicinity of the site. However, Shaq Al-Te'eban Industrial Area for Marble and Granite lies within the Project's immediate direct area of influence. Commercial and recreational establishments such as restaurants, supermarkets, shops, banks, clubs, etc. lie within the project's immediate direct area of influence. Maadi satellite station, the Olympic Center for Training National Teams, and the Maadi Technology Park are present within less than a km from the site. Sadat Academy for management Sciences also lies within the project's area of immediate direct influence. Almost all unshaded areas inside the project's area of immediate direct influence shown in the figure below are either residential-commercial area or areas under development.

The site is neither located in a nature protection area nor in a water protection area. However, the entrance to Wadi Degla Protectorate and the Nile River intersect with the Project's area of immediate direct influence. The site is also not located in a designated flooding area. The Project site can be characterized as a residential-commercial area in a desert climate with a relatively flat ground surface.

Figure 5-4 Andalusia Hospital Surroundings

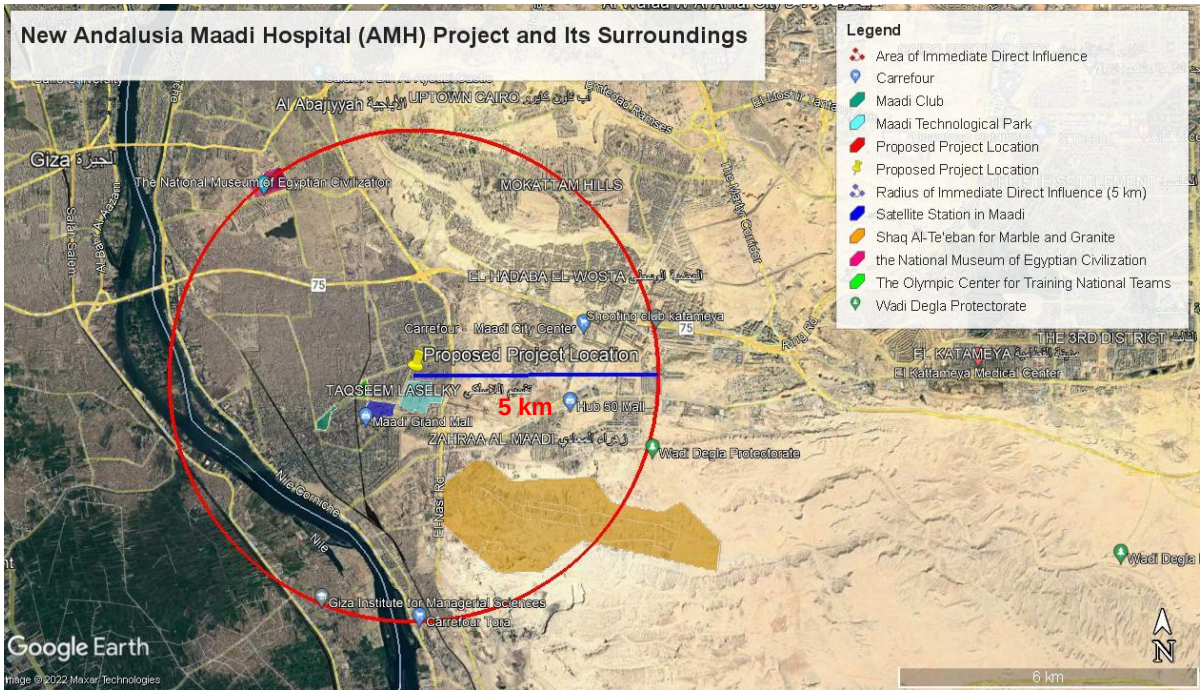


Table 5-1 below shows the approximate distances between the Proposed Project Site and the neighbouring localities and dwellings.

Table 5-1 Distances Between the Proposed Project Site and the Neighbouring Localities and Dwellings

Locality/Dwelling	Approximate Distance from the Site (Meters)
City Center Maadi (Carrefour)	3380
Maadi Club	1680
Maadi Technological Park	110
Nile River	3600
Satellite Station in Maadi	660
Shaq Al-Te'eban for Marble and Granite	2200
The National Museum of Egyptian Civilization	3250
The Olympic Center for Training National Teams	940
Wadi Degla Protectorate	4970

The neighbouring localities and dwellings around the project are more likely to be influenced by the project's impacts, and these impacts are identified in detail under Section 9.

5.6 Project Components Description

The proposed Project will comprise of the construction of a building with a footprint of 4,165 m^2, the construction of car parking areas both above-ground and underground (as part of the building) and landscaping.

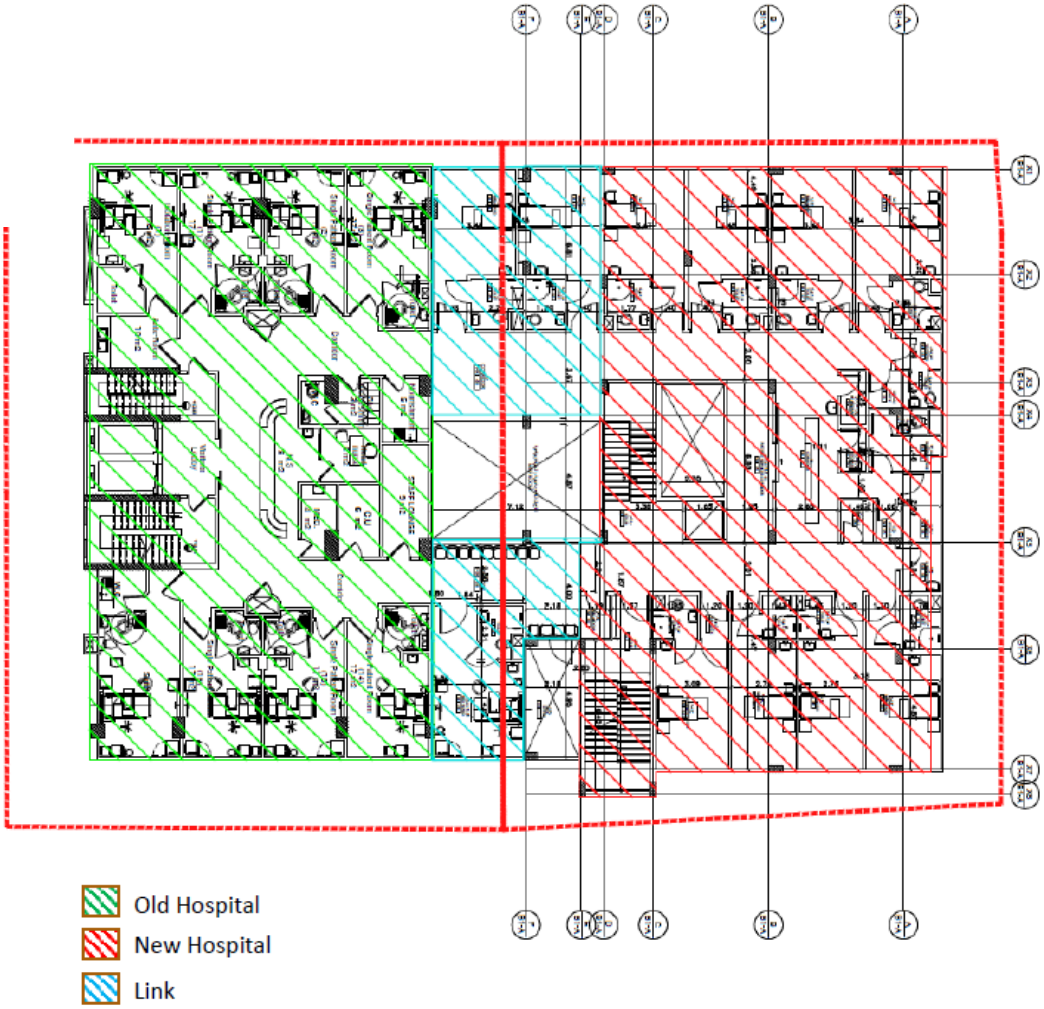
Table 5-2 Project Departments and Areas per Floor

Floor	Departments	New Building Area	Link Area	Old Building Area	Total Floor Area
B2 Floor	Maintenance/ morgue/ waste/ kitchen	536	-	-	536
B1 Floor	Laundry/ sterilization/ room service/ water	536	-	596	1,132
Ground Floor	Entrance/ emergency	358	20	480	858
1st Floor	Pharmacy/ OPD	371	102	357	830
2nd Floor	In-patient	371	120	369	860

3rd Floor	In-patient	371	120	370	861
4th Floor	In-patient	371	120	370	861
5th Floor	In-patient	371	120	370	861
6th Floor	ICU	371	120	369	860
7th Floor	Operation rooms	371	120	371	862
Roof Floor	-	138	45	190	373
Total	-	4,165	842	3,842	8,894

Figure 5-5 presents the new hospital layout as well as the link to the existing hospital.

Figure 5-5: Proposed Project Layout Linked with the Existing Hospital



5.7 Construction Phase

Based on civil drawings, lean concrete layers are to be poured on two layers of polyethylene sheets at foundation level to maintain flat surfaces where 4mm thick bituminous membrane waterproofing layers will be laid, followed by structural foundations formwork and rebar placing with adequate spacing and rebar chairs to maintain top layer

rebar (if required by design), which - once complete - are followed by high strength concrete pouring along with 150mm height columns kickers to achieve bonding between columns and footings.

Columns will be poured in stages in order to prevent concrete segregation and to ensure proper joints with other framing members. For example, the first stage would be from above the foundation's kickers to below the first elevation beam bottom, an approach which requires experienced and skilled craftsmen. High grade concrete and rebar shall be used to achieve adequate compression strength. Upon reaching the first flooring level, formworks for horizontal member supports (beams or ledges) take place along with rebar placement according to the horizontal structural system adopted. Common flat slab solutions will be used to achieve higher spans and clear height. Once construction reaches the roof, light weight concrete in slopes are used to maintain water drainage towards the rainwater down spouts. Sloping is generally in two directions with a crown height at mid roof.

The finishing stage starts soon after completing the concrete works for the first floor. Masonry works start with either a cement mortar unit or red bricks with standard dimensions of 12x25x6 cm aligned using threads to ensure straight surfaces and bonded with a cement/sand mortar. For the outer elevations, the configuration will be a double walled panel with a void in between to provide soundproof and thermal resistivity. Internal walls shall be constructed of gypsum panels to provide flexible space utilization. Masonry works shall have a rough surface to ensure adhesion with plaster of cement/sand mortar for both internal and external surfaces. Surfaces will then be treated using putty paste followed by two to three layers of emulsion paints that give the final finish. Another wall cladding solution is marble tiles that will be fixed on walls using chemical or mechanical adherents to walls at mid height, while above to ceiling tiles will be plastered. For ceilings, gypsum board ceiling panels will be used to install lighting fixtures, fire detectors, heat detectors and water sprinklers. Ceilings shall be painted with emulsion paint according to the finishing schedule.

Once painting is complete, floor installation activities shall take place. According to the architectural drawings, the floors shall be marble tiles in common spaces and ceramic tiles in laboratories, lecture halls and washrooms. Both types of flooring can be fixed using a cement/sand mortar. The flooring for workshops shall be of cement tiles, while flooring for staircases and lobbies will be made of granite. All windows will be constructed of aluminium, while doors will be constructed of wood with a thickness of not less than 6 mm.

Sanitary fixtures will be made of ceramics with a vitreous china enamel coating. All water and wastewater pipes shall be constructed of UPVC. Water fixtures will be fitted with motion sensors and made of stainless steel.
The external finishing of buildings shall be of cement plastering painted with different colours as per architectural elevation drawings. Painting material used shall be heavy duty emulsion paint to withstand climatic conditions.

Beside the civil and architectural works, there will be electromechanical works that include socketing and switching, sound systems, CCTV, fire alarms and building control systems. Mechanical works will include all air conditioning and ventilation works including ducting works.

The connection with the infrastructure like electrical medium voltage cables, supply water pipes and sanitary drainage will take place according to permits of relevant authorities and shall be tested according to project specifications.

5.7.1 Fuel Consumption

Fuel (either diesel or gasoline) consumption during the construction phase will be limited to the use of generators, heavy machinery and equipment. The Project is anticipated to consume an approximate 5 L/hour/machine, as advised by construction subcontractors. Project personnel estimate the total daily consumption to be 50 liters/day. There are numerous fuel stations around the Project site with the closest one located about 100 m from site. Refuelling onsite will take place according to procedures and protocols to be produced for materials handling and use.

5.7.2 Hazardous Materials Storage

Hazardous materials stored at sites will include paints, oils, solvents, fuel and other materials that may be used for construction purposes. A temporary hazardous material storage room and/or container will be constructed at the site and have the following features as a minimum:

- Impermeable hard standing surfaces fitted with capture drains
- Restricted access
- Ventilation
- Spill kit
- Fire extinguisher
- Compartmentalized
- Labels
- Secondary containment
- Arabic and English MSDS

5.7.3 Employment and Labour

The construction phase will make use of several service providers for various elements of the development including an Engineering, Procurement and Construction (EPC) contractor, subcontractors, labourers and Andalusia managers, supervisors and engineers with varying numbers of employees. The total workforce is anticipated to be 60 workers per day for the construction phase. All labour during the construction phase will be sourced locally, starting from the governorate.

5.7.4 Emergency Response

In the event of an emergency such as a spill, construction personnel will follow a set emergency procedure which includes, using spill kits and properly disposing of contaminated materials.

5.7.5 Waste Generation

Waste generated during the construction phase is anticipated to comprise of rubble and unsuitable spoil material generated during ground clearance work, inert construction materials such as metal offcuts, unused concrete rubble and general non-hazardous wastes. Hazardous waste generated during this phase may comprise of empty paint, oil and chemical containers, contaminated soil and fluorescent lights. This phase of the Project is estimated to generate 0.5 tons of solid waste, according to site personnel. All recyclable waste will be sold to legitimate brokers and interested buyers through Andalusia.

In addition to the mitigation measures contained in Section 9 of the ESIA and the waste management plans to be prepared (please see Section 9.3.4 and 9.8.4). EPC contractors will be required to establish waste storage areas at each Project site. The storage area will be divided into non-hazardous and hazardous waste with proper separation between the two. Construction waste is to be hauled off-site by a licensed contractor on a daily basis. EPC contractor must ensure construction waste is disposed of at a licensed landfill/dump site.

Large colour coded waste skips will be installed in the waste storage area according to the following scheme:

- Hazardous wastes: Colour coded in red.
- Non-hazardous (domestic) wastes: Colour coded in yellow.
- Metal Waste: Colour coded in blue.
- Food waste: Colour coded in white.

The hazardous waste storage area is to be established as per the requirements set out by Law 4/1994 with the minimum requirements being as follows:

(a) Location

- Must be a secure site with limited admission.
- Must be located away from storage areas particularly those for hazardous chemicals, and from drinking water sources and any residential areas.
- Must have an access for loading, unloading, and responding to emergency situations.
- Must have electrical power, including emergency power supply.
- Must have a water supply for cleaning and firefighting.

(b) Layout

Outdoor storage is recommended for ease of accessibility, handling, safety, and cost considerations. Indoors storage is vital to protect stored waste from extreme heat or for other considerations. Storage space should be laid out to contain all types of hazardous waste produced by the Project. It should provide for:

- Access from at least two sides for responding to fire and other emergency situations.
- Adequate separation of incompatible wastes, safe movement of waste containers using mechanical equipment, and adequate access for inspection.
- Ignitable or reactive waste (solid or liquid) should be stored at least 15 meters from the facility's property line. Figure 3 shows the layout for such a facility.

(c) Security

The storage area should:

- Be secured with a 3-meter wall or fence and have locked gates. The keys to the lock should be properly labelled and kept in a secured office. A duplicate or master key should be available in case of emergencies.
- Have at least two access gates: one for normal use, the other for emergencies.
- Have a person responsible for the security of the storage area.
- Be controlled: only trained personnel can enter the hazardous waste storage area.
- Have a restricted area sign: a hazardous waste storage area.
- Be well lit for security at night.
- Be designed to accommodate temporary containment of spills and equipment to respond to spill incidences.

(d) Packaging and Labelling

Labels in Arabic should show:

- Clear signs or symbols indicating the hazardous nature of the contents.
- The container's contents active substances, and concentrations.
- The original source of the waste.
- Total and net weights.
- Date when the container was filled and when the waste was generated.
- Name and contacts for the person responsible for filling the container.
- Safe storage method and warning about mixing with other reactive substances or wastes.
- Personal protective gear needed for handling.
- The best manner for dealing with emergencies (leakage, spills, fire…etc)
- Special precautions for opening and emptying.

The EPC contractor shall ensure that all hazardous waste is transported to a licensed landfill by a licensed contractor (i.e. having approval from the EEAA to transport hazardous waste within the governorate in which the site is located). The transporter must provide waste manifests to the EPC contractor for each haulage, which are to be made available to Andalusia. The EPC contractor will maintain a hazardous waste register according to Law 4/1994. Non-hazardous waste is to be transported by the municipality and disposed of at a licensed landfill and/or dumpsite.

5.7.6 Wastewater

During the construction phase, sanitary effluent will be directed to an onsite septic tank which shall be constructed at the early onset of the construction phase. The septic tank shall be lined with concrete to prevent leaks and it will have a capacity of 110% of the estimated wastewater generation during construction. The septic tank will be regularly emptied using suction trucks and wastewater will be disposed of by a licensed contractor at the nearest wastewater treatment plant.

5.8 Operational Phase

5.8.1 Fuel

The nature of the Project is not one which is dependent on the use of fuel. The Project shall be connected to the national electricity grid and a backup generator will be present for emergency use. Therefore, fuel consumption during the operation phase of the Project is considered negligible.

5.8.2 Hazardous Materials Storage

Hazardous materials stored at sites will include chemicals, biological agents, cleaning agents, gas cylinders including anaesthetics, oil, colorants and other materials that may be used for the different medical activities. A hazardous material storage room will be constructed within the building and have the following features as a minimum:

- Impermeable hard standing surfaces fitted with capture drains
- Restricted access
- Ventilation
- Spill kit
- Fire extinguisher
- Compartmentalized
- Labels
- Secondary containment
- Arabic and English MSDS

5.8.3 Drainage

Although the site is located in an area with little rainfall, the Project will be equipped with a drainage system in which rainwater/stormwater, irrigation drainage and/or rinse water from cleaning activities undertaken in exterior areas, will be directed to drains and discharged into the existing sewer network at the site.

5.8.4 Fire Detection and Controls

Automatic fire detection systems (smoke, heat and flame detectors) will be installed within the building with external areas to be monitored by permanent (24 hour) personnel presence. In the event of a fire, detectors will sound an alarm, or Project personnel will activate a manual alarm by means of activation alarms strategically placed around the site. Mobile firefighting equipment including CO_2 and water additive types will also be located throughout the building.

5.8.5 Emergency Response

In the event of an emergency such as a fire, personnel will follow a set emergency procedure which includes, evacuating the area, providing access to emergency responders and following an evacuation procedure.

5.8.6 Waste Generation

Operational phase activities will generate both non-hazardous (office wastes, general commercial waste) and hazardous wastes (empty chemical, oil, paint, colorant, containers, batteries, etc.) that includes medical waste

(sharp objects, contaminated PPE, body tissue, radioactive waste, etc.). Non-hazardous wastes will be collected in containers for disposal by a licensed contractor to a licensed local waste disposal facility. Hazardous wastes will be stored in the designated hazardous waste storage area, designed according to the requirements of Law 4/1994 (as per Section 5.6.8). The hospital will follow the provisions provided in Section 5.7.5 regarding the disposal of hazardous and non-hazardous waste.

The hospital will maintain a hazardous waste register according to Law 4/1994. This phase of the Project is estimated to generate 14,400 kg of non-hazardous waste and 4,800 kg of hazardous waste per month.

5.8.7 Wastewater

Wastewater generated during the operation phase will be discharged directly into the municipal sewer network which the Project will be connected to during the operation phase. The municipal sewer system is managed and maintained by the Ministry of Housing, Utilities and Urban Communities.

5.8.8 Employment and Labour

The operational phase is estimated to employ a total of approximately 205 medical staff members and 500 non-medical staff members during the first year of operation, and the number is estimated to reach 352 medical staff members and 800 non-medical staff members by the ninth year of operation. (All of whom will be sourced locally).

5.9 Overall Duration and Timing

The construction phase of the Project is anticipated to begin in August 2022 and last for 10 months. The Project is scheduled to begin operations in January 2024.

5.10 Environmental and Social Risks That May Delay/Constrain the Realization of Different Activities

The environmental risks that may delay/constrain the realization of the different activities planned in the program to be funded are mainly associated to the pre-construction phase of the project as well as the construction phase. Environmental risks during the pre-construction and construction phases can be as follows:

- Delays in obtaining the environmental permit
- Non-compliances with the national regulations
- The absence of the E&S Specialist(s)

Given the details mentioned above and that the site is owned by Andalusia Group, and there are no affected people on-site, there are no social risks to delay/constrain the realization of different activities planned in the program to be funded.

6 ENVIRONMENTAL BASELINE

6.1 Introduction

Sampling campaigns (air, noise, groundwater, soil) are not included within the scope of work, and therefore, no sampling has been undertaken to obtain site specific environmental data at the Project site. The Consultant has relied on secondary data available online (EEAA reports, previous ESIA studies completed in the Project area, peer reviewed articles, etc.), visual observations made of the site and local knowledge. Ambient air quality was obtained from the EEAA's most recent monthly air monitoring report in December 2021. It is important to note that the air quality data reported from these stations does not necessarily reflect the air quality at the Project site.

The environmental baseline section concludes that the following environmental components have been concluded as follows, and this conclusion is based on visual observations on-site and available literature.

Flora and Fauna: No species of fauna and flora of significance, either in number or importance, were recorded or observed on-site.

Endangered Species: No evidence to support the presence of endangered species was observed on-site.

Protected Areas: Only one protected area, which is Wadi Degla, was identified about 5 km from the Project site. It is worth noting that the protectorate was designated as so for its richness in fossils and land formations rather than its ecological importance since only a few species inhabit the protectorate. Therefore, due to the nature of the proposed Project's activities and the protectorate as well as the relatively long distance between them, the protectorate is not likely to be impacted by the project.

6.2 Climate

Based on weather data collected over 20 years between 1999 and 2019, Cairo, including Maadi, is considered to have a desert climate. The climate is classified as a hot desert climate by the Köppen-Geiger system. The average annual temperature is 22.6 °C in Maadi, with an approximate 28 mm of precipitation annually.

6.3 Temperature

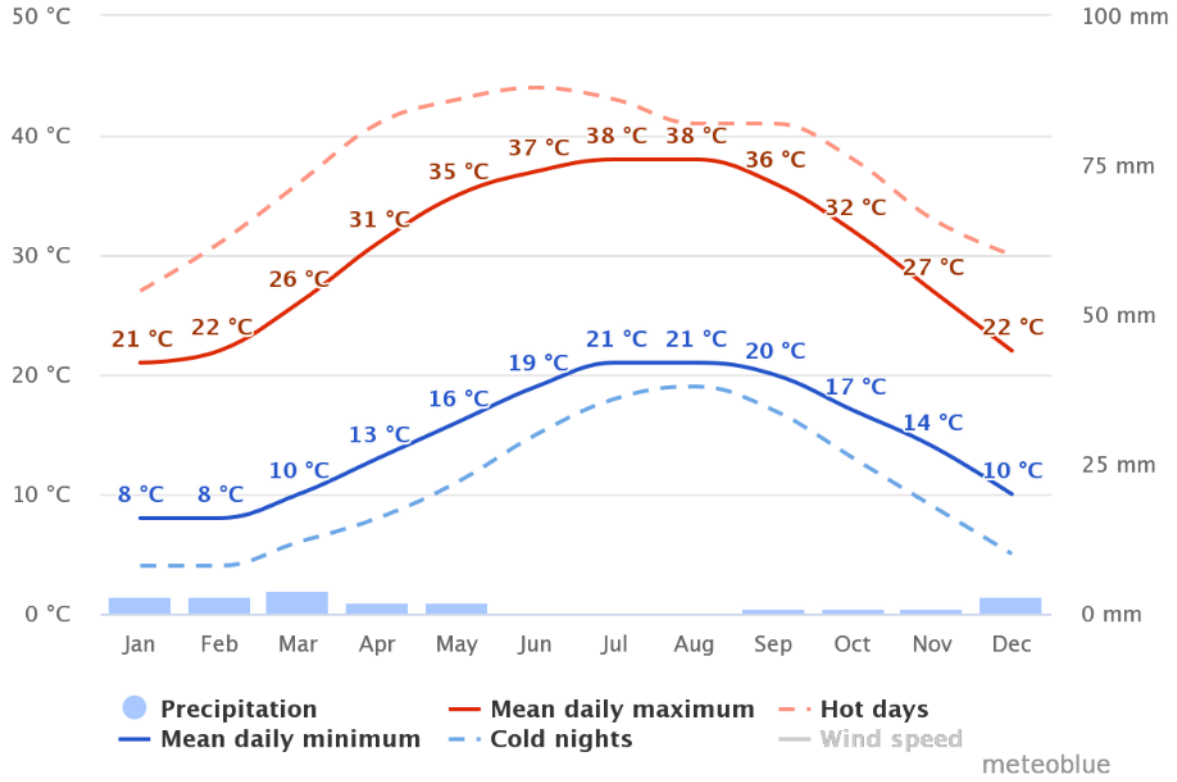
Average air temperatures range from 8°C at night in the winter to 38°C in the morning in summer. The following figure shows the average monthly air temperature throughout the year. January is the coldest month with the maximum temperature recorded being 21°C and the minimum temperature being 8°C. July and August, being the hottest months, have a maximum temperature of 38°C and a minimum of 21°C. Table 6-1 and Figure 6-1 show the temperature and the average temperature in Maadi, respectively.

Table 6-1: Temperature in Maadi

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average Temperature (°C)	14.5	15	18	22	25.5	28	29.5	29.5	28	24.5	20.5	16
Minimum Temperature (°C)	8	8	10	13	16	19	21	21	20	17	14	10
Maximum Temperature (°C)	21	22	26	31	35	37	38	38	36	32	27	22

Source: Meteoblue.com

Figure 6-1: Average Temperature in Maadi



Source: Meteoblue.com

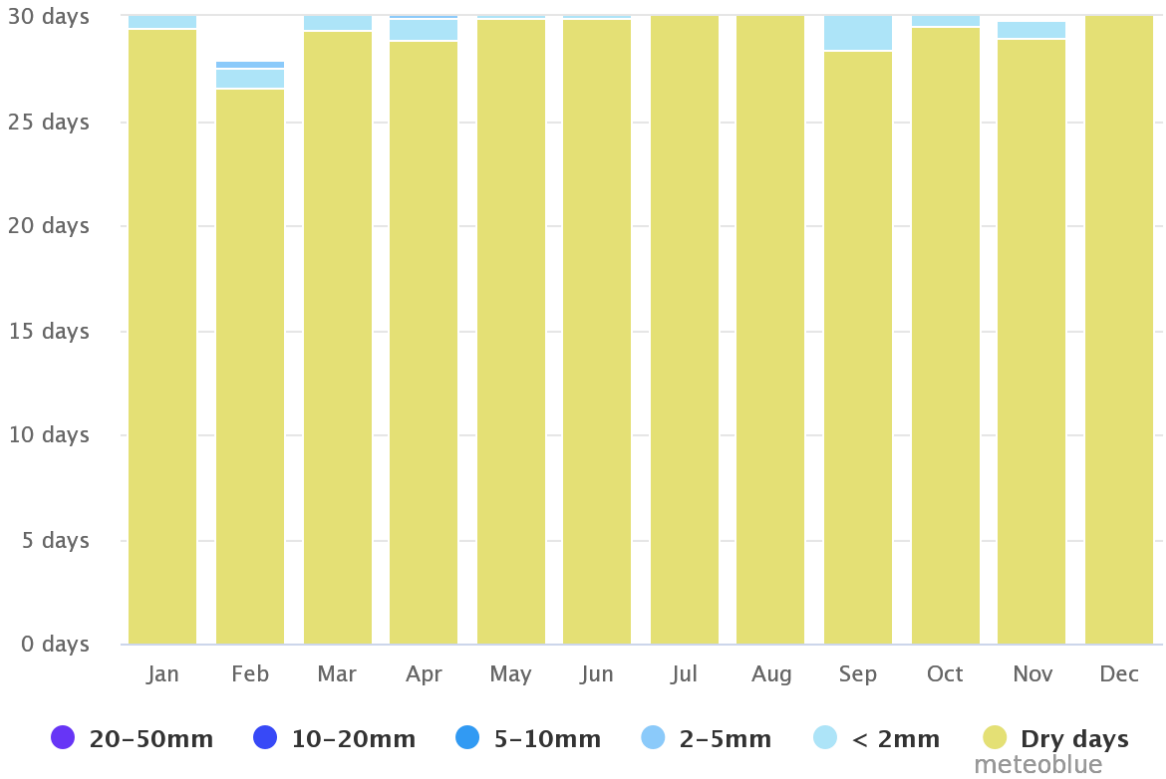
6.4 Rainfall

Maadi exhibits infrequent and usually short rain showers. The rain on Maadi is irregular, and it seldom falls. The average annual number of rainy days is about 12.5 days, and the average annual precipitation is about 20-25 mm, usually in the fall and winter months in the form of short heavy showers, often accompanied by thunderstorms and hail. Precipitation in the city throughout the year is presented in Table 6-2. Figure 6-1 in the previous section shows a chart representation of the information in Table 6-2. Figure 6-2 below shows the days in each month throughout the year according to the amount of rainfall.

Table 6-2: Precipitation in Maadi

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rainfall (mm)	3	3	4	2	2	0	0	0	1	1	1	3

Figure 6-2 Number of rainy days in each month and the corresponding precipitation amounts

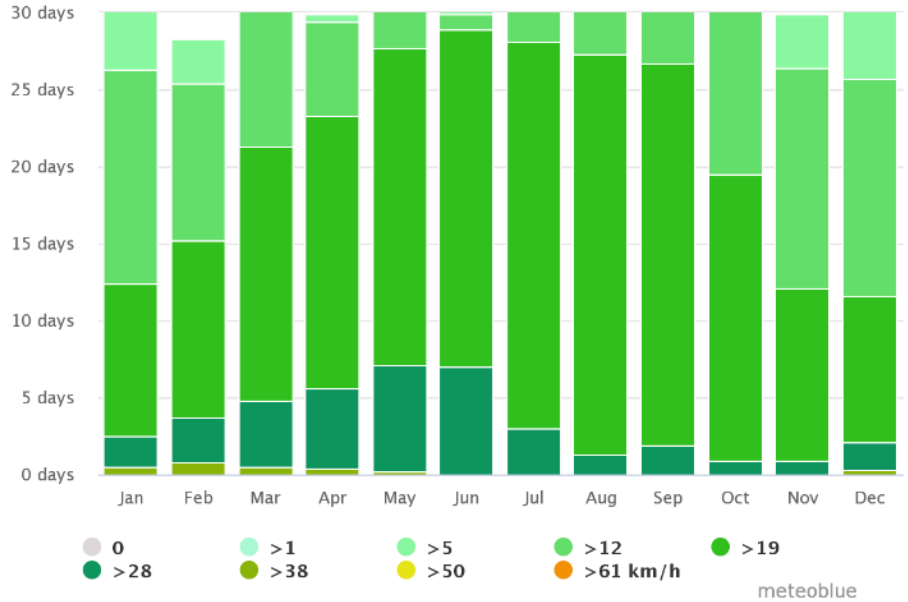


Source: www.meteoblue.com

6.5 Wind

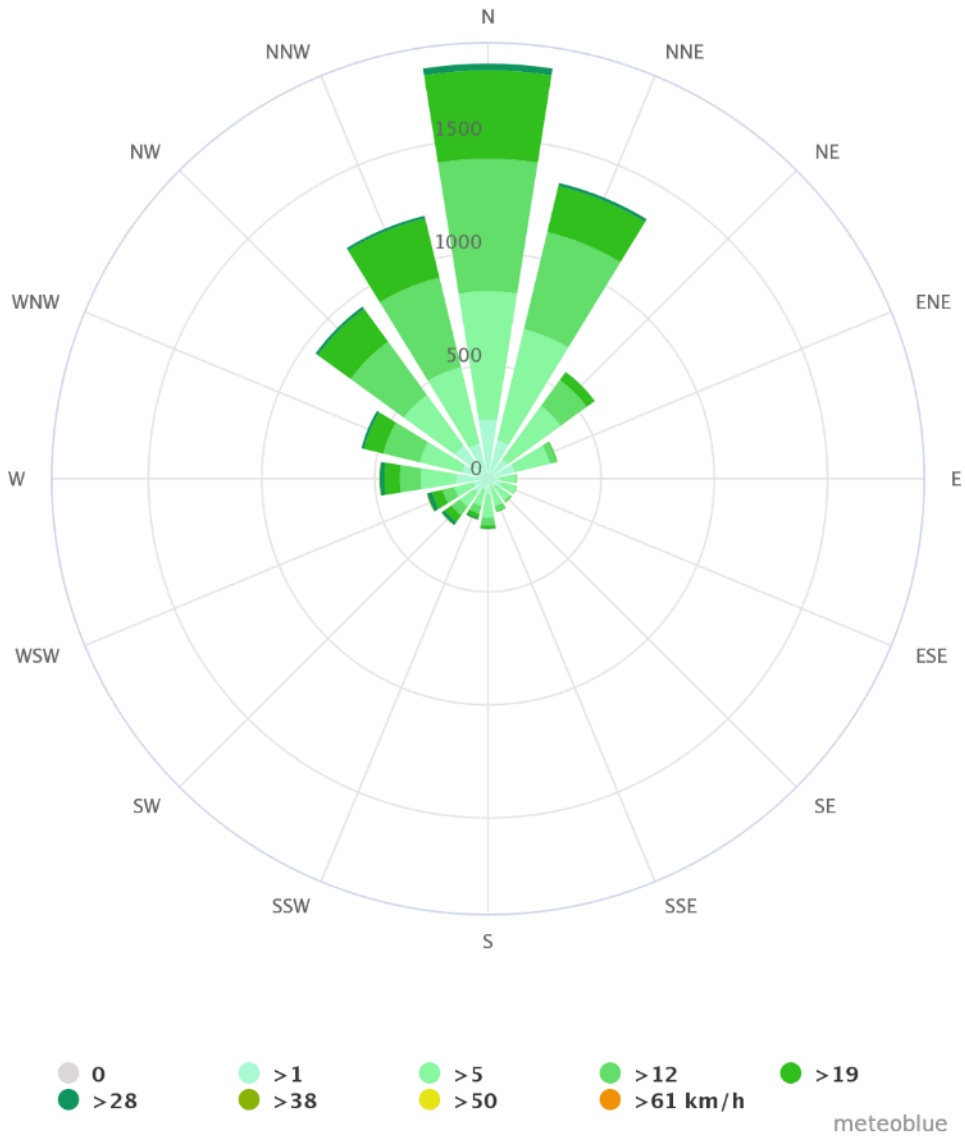
The prevailing wind direction in Cairo and Maadi is north, followed by northeastern and northwestern winds. The wind speed ranges from 5 km/h on calm weather days to more than 28 km/h on stormy weather days. The days in each month that the wind reached certain speeds and wind rose are shown in Figure 6-3 and Figure 6-4 below, respectively.

Figure 6-3: Wind Speed in Maadi



Source: www.meteoblue.com

Figure 6-4 Wind Rose for Maadi



Source: www.meteoblue.com

6.6 Relative Humidity

In general, relative humidity is low in Cairo, with a high gradient from north to south. The average annual relative humidity is approximately 35-55%, with maximum values reaching 55% in December, while the lowest value, 36%, occurs in May. Table 6-3 shows the relative humidity in Maadi throughout the year.

Table 6-3: Relative Humidity in Maadi

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Relative Humidity (%)	54	47	42	37	36	40	45	47	48	52	54	55

Source: www.climate-data.org

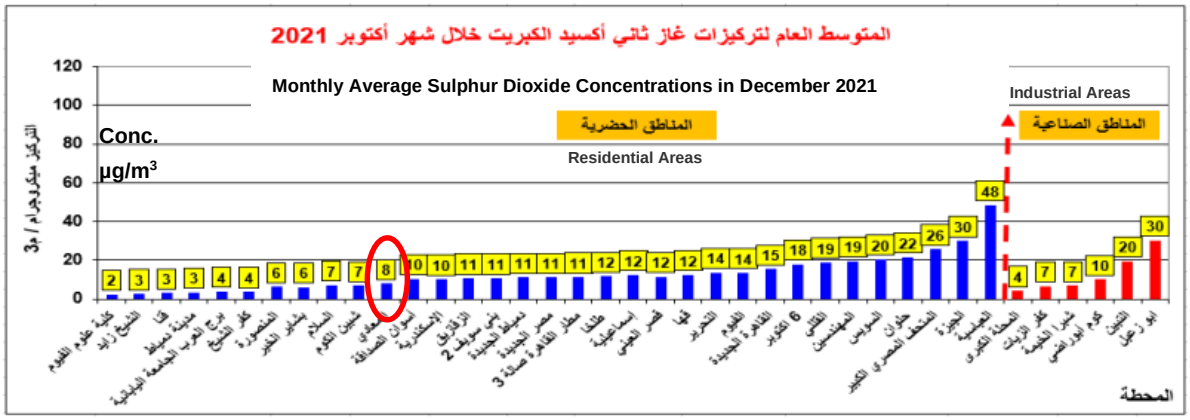
6.7 Air Quality

Air quality standards for ambient air are defined in the executive regulations of Law 4 of 1994 in terms of maximum permissible limits for pollutants versus exposure period. The National Ambient Air Quality Monitoring Network was established by the Egyptian Environmental Affairs Agency (EEAA) in 1998 and currently includes 109 monitoring stations distributed throughout Egypt, of which two are mobile. The Environmental Affairs Agency issues official monthly reports presenting the latest results on ambient air quality in Egypt, the last of which was in December 2021 from the date of this study. The network stations are divided into the following categories: industrial, urban, high-traffic, reference, and cross-activity areas. The latest monthly report, released in December 2021, shows the results obtained from these stations. The nearest station to the project site is the Maadi station, and the following are the results obtained for different measurements of air pollutants:

6.7.1 Sulfur Dioxide (SO_2)

Figure 6-5 shows that Maadi reported a monthly average value of 8 µg/m^3 for the month of December 2021, which is in compliance with Law 4/1994.

Figure 6-5: Monthly Average Sulphur Dioxide Concentrations in December 2021 – Maadi



The average hourly concentration and average daily concentration in Maadi showed almost 100% compliance with the prescribed limits (Figure 6-6).

Figure 6-6: Average Hourly Concentration of Sulfur Dioxide in Urban Areas during December 2021 – Maadi

6.7.2 PM10

The air monitoring station in Maadi recorded a monthly average value of 206 µg/m^3 in December 2021, which is not in compliance with Law 4/1994, and about 35% non-compliance in the average daily recordings was observed,

however. Non-compliances within the district, according to the EEAA, are attributed to weather conditions in which winds result in the dispersion of dust and thus PM10. Traffic has also been shown to be a cause of PM10 emissions as result of fossil fuel combustion from mobile sources. (Figure 6-7 and Figure 6-8).

Figure 6-7: Monthly Average PM10 Concentrations in December 2021 – Maadi

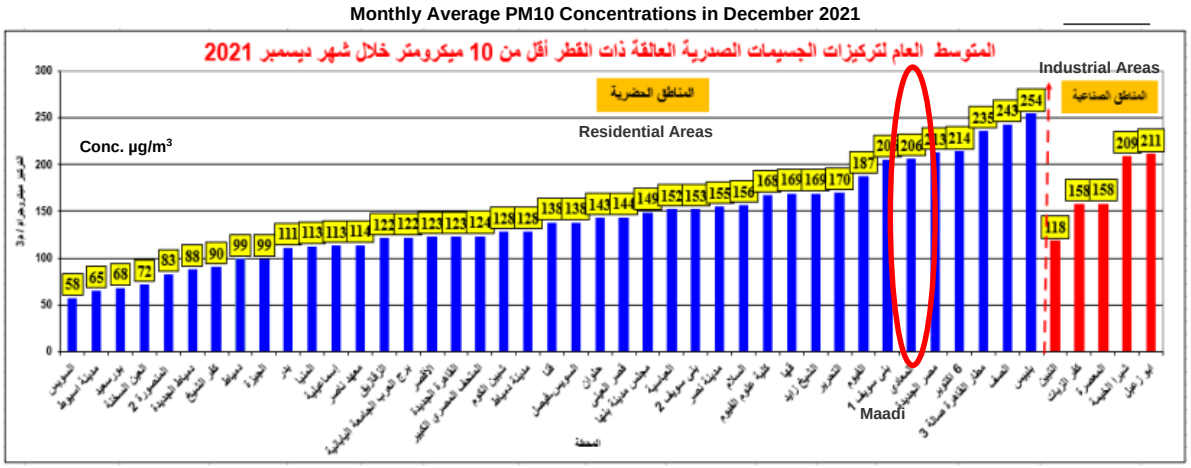
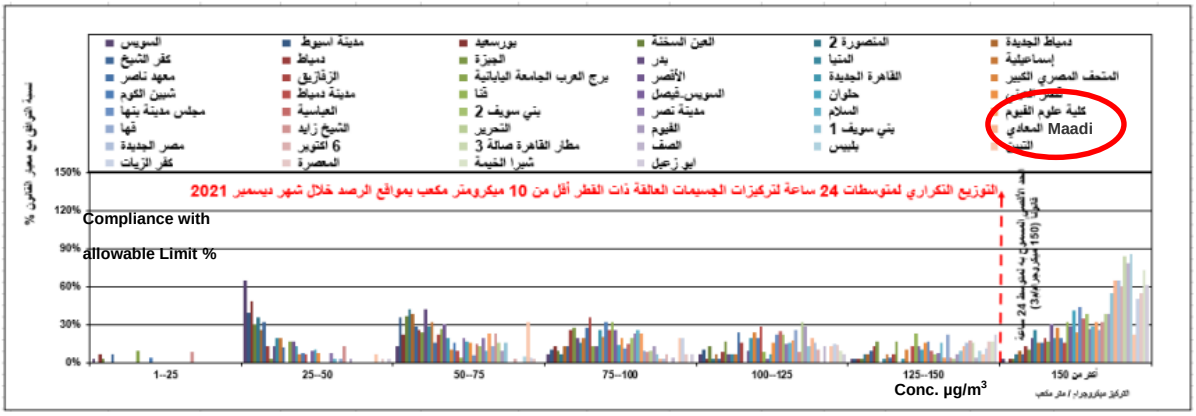


Figure 6-8: Average Daily Concentration of PM10 in Urban Areas during December 2021 – Maadi



Also, according to iqair.com visited on the 27th of April 2022, the AQI in Maadi is 95 US AQI.
Given the aforementioned results, it can be observed that air quality in Maadi is moderate.

6.8 Geology

6.8.1 Soil

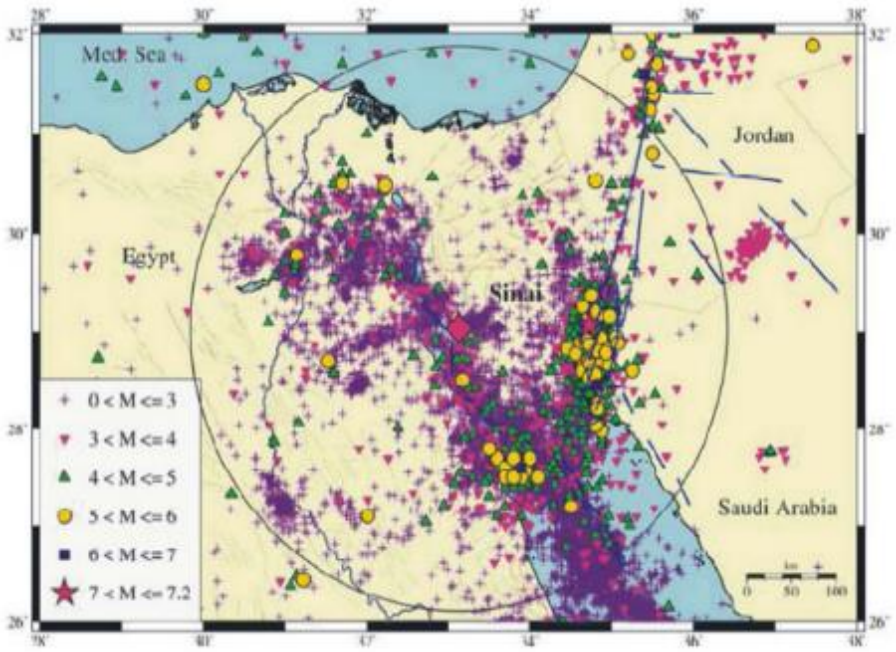
Cairo is underlain by tertiary sedimentary rocks and quaternary soils of a thickness hardly exceeding 1,000 m. Tertiary aged basalts are exposed at El Khanka to the north of Cairo City and at Abu Ruwash to the west. Mesozoic sedimentary rocks are exposed only in a folded area to the west. In the subsurface the sedimentary succession, developed mainly into an upper carbonate portion and a lower clastic portion, has a thickness of about 2,000 m and rests on the Pre-Cambrian Basement. Northward from the Cairo “Hinge-Belt,” the sedimentary succession increases rapidly to more than 10,000 m in the direction of the folded “Mobile-Belt” at the southern edge of the Mediterranean Geosyncline. The regional geological structure is simple and takes the form of a low northward dip-slope on the foreland side of the great Arabian-Nubian Massif (Shata, 1988). The sub-regional structure is developed into an upwarped zone comprising the southern portion of the Nile Delta and extending northeastward into Sinai and extending also southwestward into the Western Desert (Shata and El Fayoumi, 1970).

According to a study conducted on the Wadi Degla Basin in 2021 (Ahmed et al, 2021), the vacant undeveloped land in the Wadi Degla basin (5 km from the site) is mainly covered by middle and Upper Eocene age rock units made up of carbonate and intercalation of marly limestones with bands of dolomitic limestones at the base and marly at the top. According to Aboushook and Sherif (2000) and Said (1962), Maadi Formation within the basin (Middle Eocene age) is made up of a series of brownish beds of fissured limestone, marl and shale. It includes the following units from top to bottom: the yellowish white dolomitic limestone becoming sandy towards the base with traces of gypsum pockets; the alternating yellowish sandy and greyish shale beds with minor intercalation of marls and salts; the fissured and cavernous yellowish brown limestone with some marl and gypsum pockets and the alternating yellowish sandy and greyish shale beds with minor intercalation of marls and salts.
As for the project site itself, it is located within a residential, fully-urban area covered with asphalt and sparse trees and vegetation
No soil investigations have been conducted as part of the study, and therefore no information on soil quality and potential soil contamination issues from external factors such as construction and demolition waste cannot be ruled out. We will undertake a visual assessment during our site visit to enable to further gauge the possibility of contamination onsite.

6.8.2 Seismic Activity

Maadi is located in Cairo Governorate which is considered an earthquake prone area. According to the Egyptian Code for Calculating Loads and Forces in Construction and Building Works (2012), the Egyptian governorates are classified into 6 seismic zones, namely zone 1, 2, 3, 4, 5a and 5b, with zone 1 being the least affected by earthquakes. Giza Governorate is classified under Zone 3. Figure 4-8 presents a map showing seismic activities in Egypt for the period from 1900 until late 2009.

Figure 6-9 Seismic Activity in Egypt (1900-2009)



Source: Dahy (2012)

According to the information obtained from Thinkhazard.org (accessed in April 2022), the earthquake risk in Cairo is low according to the information currently available. This means that there is a 2% chance of a devastating earthquake in the project area in the next 50 years.

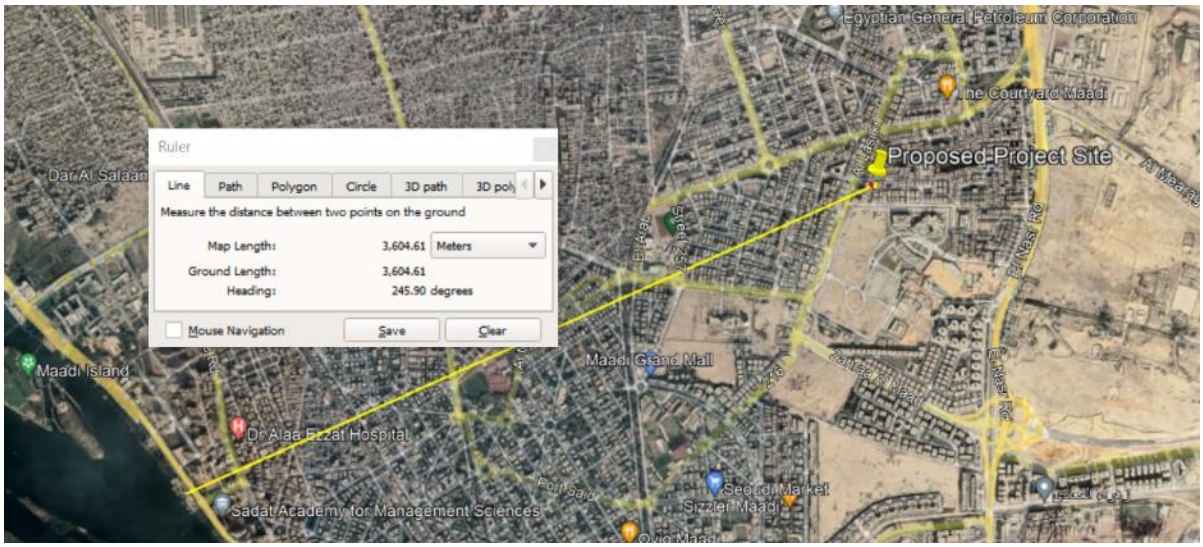
6.9 Topography

The site is characterized as having a relatively flat ground surface with a slight east to west slope. Elevation at the site is approximately 37-50 m above sea level. The soil quality of the city is mostly sandy soil with some rock formations.

6.10 Surface Water

The Nile River is the closest water body to the site at a distance of 3.6 km as shown in Figure 6-10.

Figure 6-10 Distance from the Project Site to the River Nile

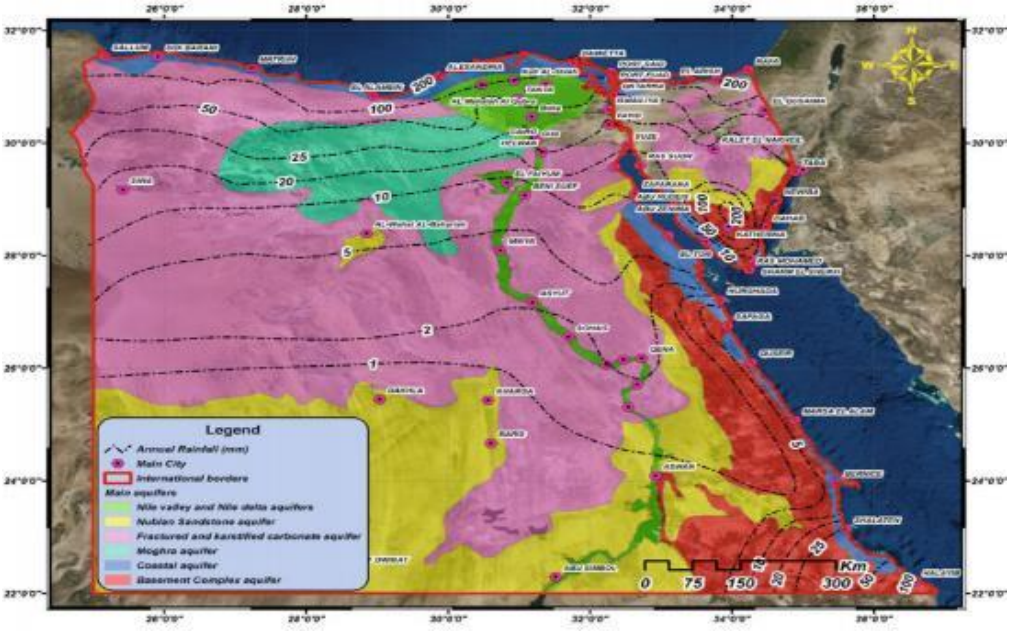


According to thinkhazard.org website, the site is not located in an area that is at risk of flooding. However, according to a 2021 study, the site is located within the vicinity of the Wadi Degla Basin which is susceptible to flash floods due to rain.

6.11 Groundwater

Publicly accessible information on the hydrogeology in the Maadi area is limited. A study was conducted in 2012 to study the hydrogeology of the Helwan area, located immediately south of Maadi. The results from this study shall be presented here given the proximity of the study area to the Project site. The site lies on the quaternary aquifer which consists of sands, siltstone and calcareous shale, existing under unconfined conditions. Regionally, groundwater flow is toward the north along the valley and laterally away from the Nile River. Some downward flow penetrates the semi confining Holocene clay as recharge to the aquifer. The quaternary aquifers consist of a Holocene layer is composed of Nile silt, clay and sand with a thickness ranging between 10 m north of Helwan and 14 m in the south and vanishing near the eastern edges of the flood plain; and A Pleistocene layers composed of silts, graded sands and gravels with total thickness ranging between 50 m north of Helwan and 80 m southward. The exact depth to groundwater within the Project site could not be identified; however, given its proximity to the River Nile, groundwater is not expected to be deep. Nonetheless, according to a study conducted in 2018 on the aquifer, depths ranged from 130 m to 170 m (El-Sayed and Morsy, 2018). The aquifer reportedly has slightly acidic to alkaline water ($7.1 < pH < 8.2$) with salinity (as TDS) ranging from fresh to brackish water ($440 < TDS < 912$ mg/l) according to Sadek and Abd El Samie (2000).

Figure 6-11 Groundwater Aquifers in Egypt



6.12 Biodiversity

There are no natural habitats in the immediate vicinity of the Project site so the site is considered to be of low biodiversity value. There are no protected areas within the Project proposed area. The nearest protected area is Wadi Degla Protectorate which is located approximately 5 km southeast of the site, as shown in Figure 6-12 and Figure 6-13. It is worth noting that the protectorate was designated as so for its richness in fossils and land formations rather than its ecological importance since only a few species inhabit the protectorate. However, the desert areas inside and outside the settlements still support some forms of life. These include some plant species as well as many reptiles, mammals and birds.

The project site does not pass through any Important Bird Areas (IBAs) as shown in Figure 6-14. A common species of desert birds documented near the study area is the Oenanthedeserti, which lives in desert plains and semi-desert environments. Other species documented in the area include Turdusphilomelos, Athene noctua, and Coracias garrulous.

Figure 6-12 Distance from the Project Site to the Wadi Degla Protectorate

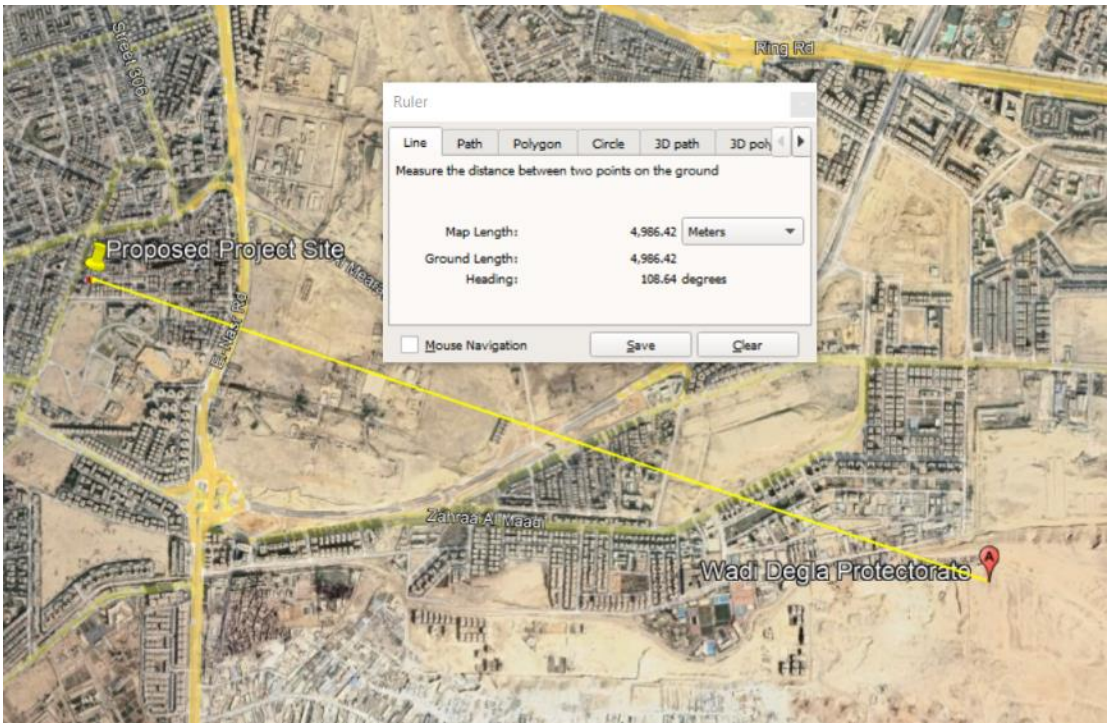


Figure 6-13 Protectorates in Egypt

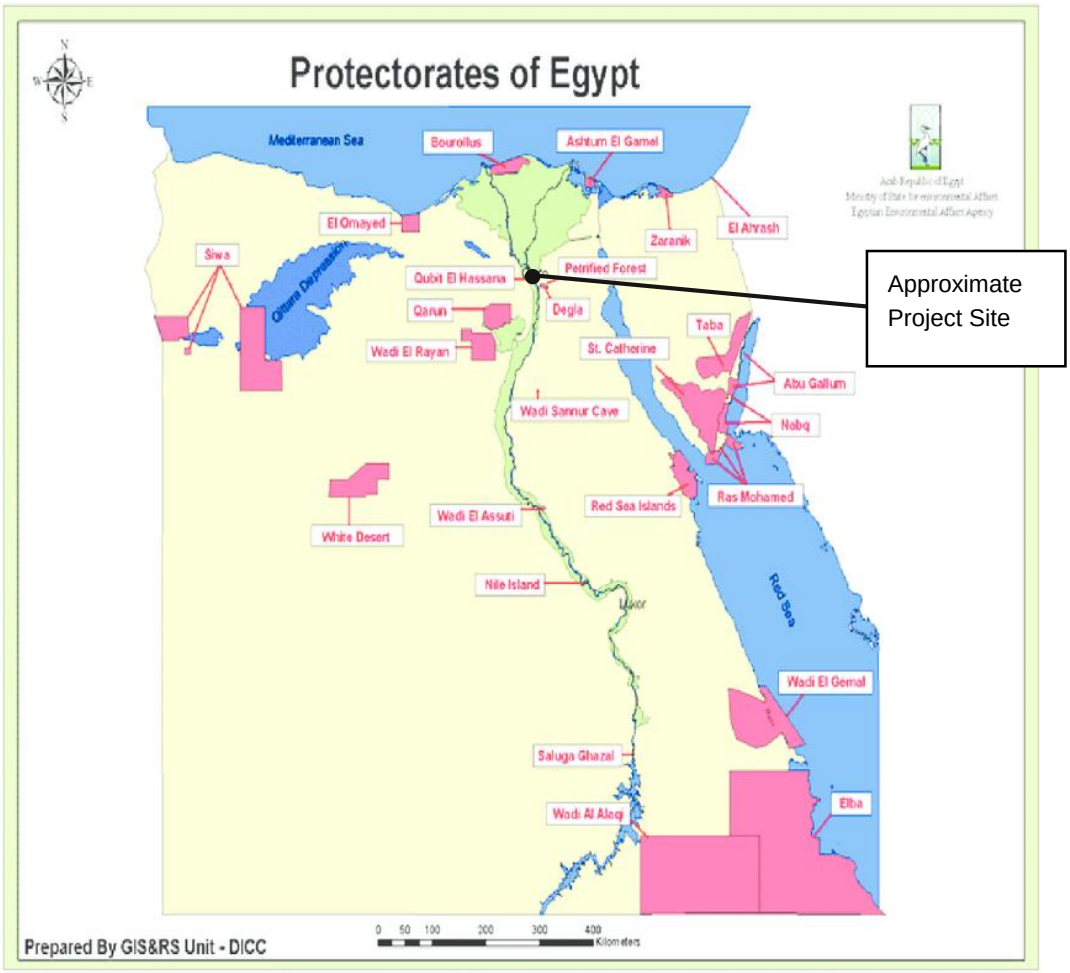
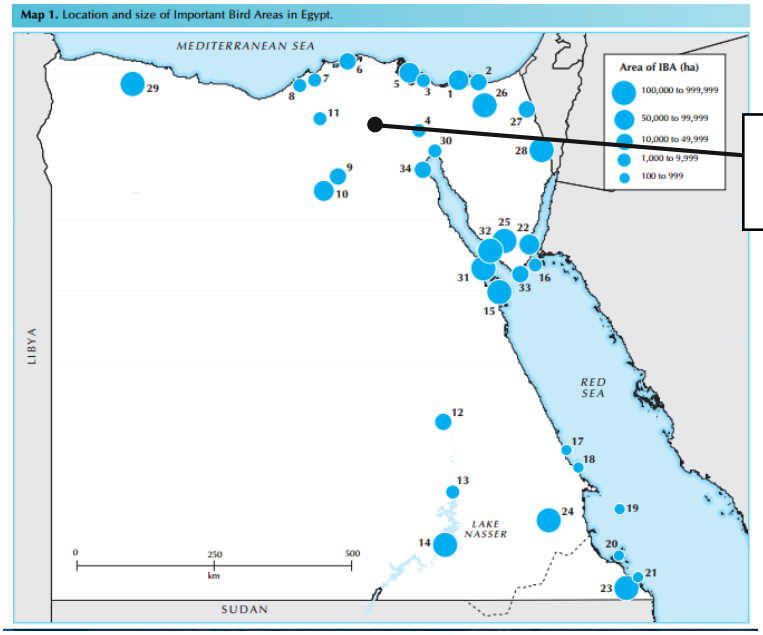


Figure 6-14 Important Bird Areas in Egypt



7 SOCIAL BASELINE

This section of the study contains a description of the characteristics of the socio-cultural situation in the study area. Where the focus is on the following points: basic information about the governorate, administrative distribution, demographic characteristics, description of community development, availability of services, general description of health and economic characteristics.

7.1 Introduction

Maadi is a famous suburb located south of the city of Cairo, on the eastern bank of the Nile River, about 12 km south of downtown Cairo. Its development was planned at the end of the 19th century by the Khedive Ismail who decided to invest the Helwan area to establish a tourist and medical resort in the small city with lush gardens and springs of sulfur water. In the early 20th Century, a Candian retired officer had finalized planning the district which included wide boulevards and large villas. The district attracted expats and well-off Egyptians and they remain the majority of the residents of the district to this day. The old Maadi district in the south of Cairo on the eastern bank of the Nile is considered one of the most luxurious and most expensive residential areas in the Egyptian capital. It is home to embassies and headquarters for international bodies and foreign experts. It is divided into several residential compounds, namely, New Maadi, Wadi Degla, Maadi gardens, Zahraa El-Maadi, Maadi Sarayat and Tora.

7.2 Administrative Divisions

Cairo Governorate's total area is approximately 3,085.10 km^2, forming 0.3% of the country's total area. Cairo is an urban governorate with a total inhabited area of 6.17% divided into 38 districts, and distributed over four geographic zones: North, East, South and West. The South Zone/ Area includes 12 districts/ administrative centres: Masr El-Qadima, El-Khalifa, El-Moqattam, El-Basatin, Dar El-Salam, El-Sayeda Zeinab, El-Tebin, Helwan, El-Maasara, El-Maadi, Tora, and May 15 (Figure 7-1). Maadi, itself, is divided into five neighbourhoods: El-Sarayat Al-Sharqia, El-Sarayat Al-Gharbia, Maadi El-Khabiry Al-Sharqia, El-khabiry Al-Wsta, and El-khabiry Al-Gharbeya. As seen in Figure 7-2, the Project site is located in El-Sarayat Al-Sharqia.

Figure 7-1 Administrative Divisions of the South Area of Cairo

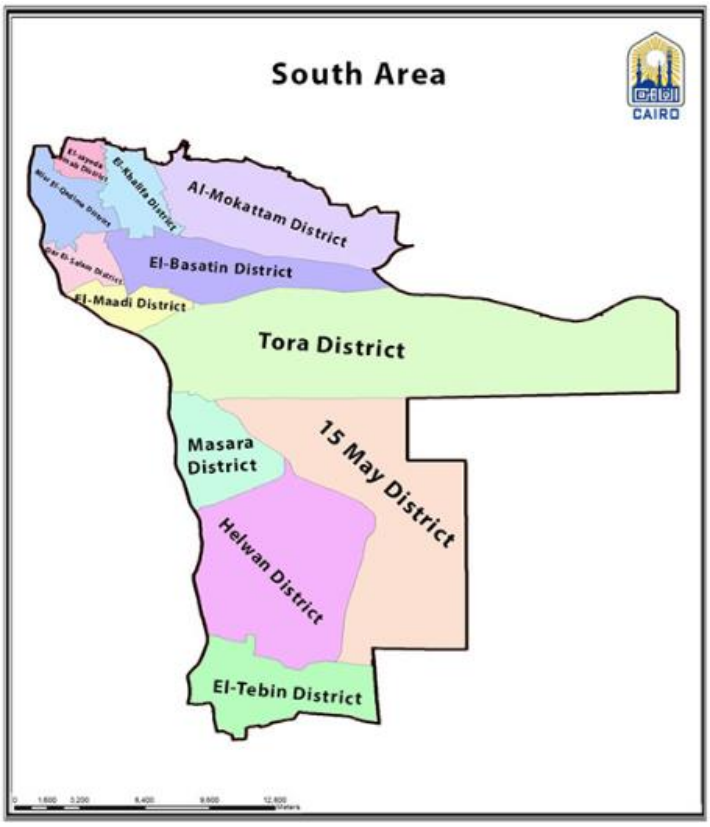
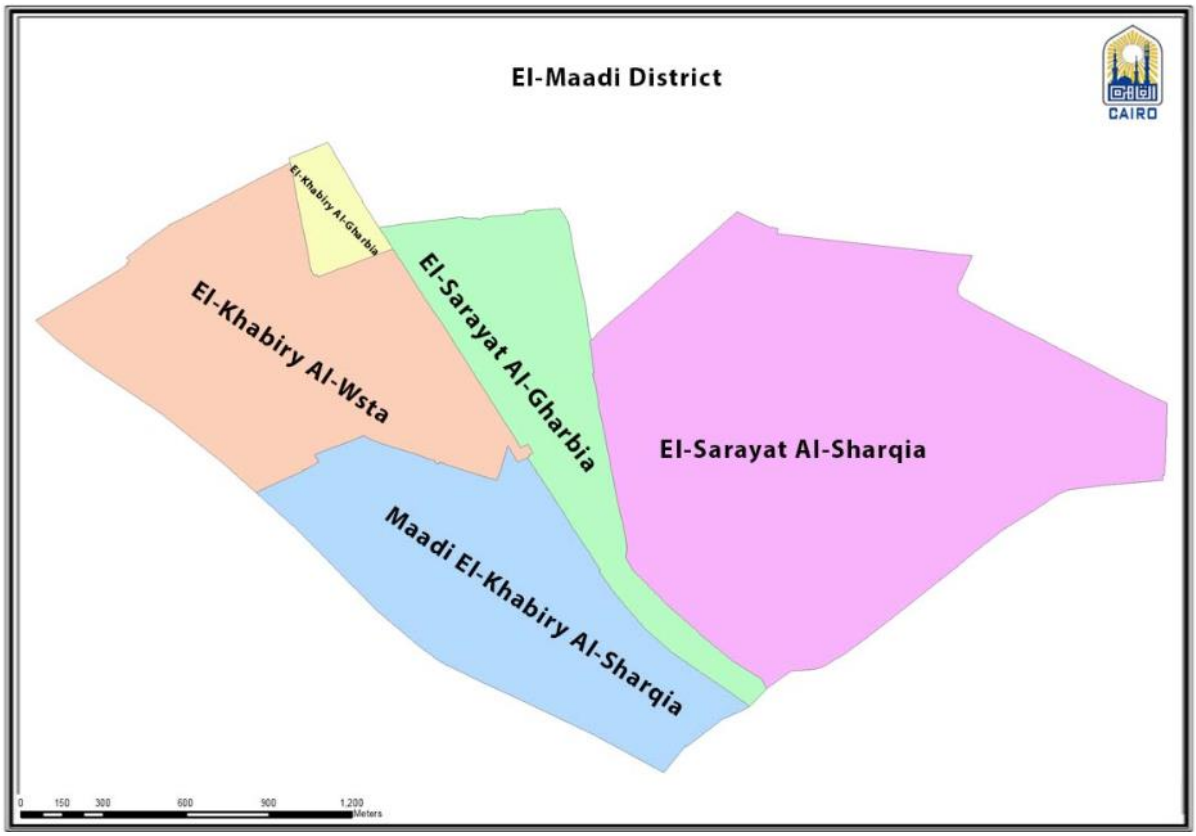


Figure 7-2 Maadi District Neighborhoods



7.3 Demographic Characteristics

The total estimated population of the Cairo Governorate for 2021 is 10,021,820. According to CAPMAS' 2017 consensus, the total population in Maadi (in 2017) was 88,556 or urban residents given that the district is fully urban.

Table 7-1 provides data on the natural growth rates in the Cairo Governorate. Additionally, displayed is the percentage of citizens residing in the Cairo Governorate out of the total population of the Arab Republic of Egypt. Table 7-2 summarizes the population distribution based on gender in Cairo and Maadi.

Table 7-1 Population Growth Rate in Project Study Area

Item	Cairo Governorate
The percentage of the population to the total population nationwide (%)	9.9%
Population natural growth rate (/ 1000 people)	12.2
Average of family members (people)	3.70
Birth rate (live birth/ 1000 people)	21.5
Mortality rate (death/ 1000 people)	9.3

Source: Cairo Governorate- Egypt Description by Information, 2021.

Table 7-2 Population Distribution According to Gender in Cairo Governorate According to 2021 Statistics and Maadi According to the 2017 Census

Area	Number of Households	Population		Total population
		Male	Female	
Cairo Governorate	2,595,977[10]	5,184,901	4,836,919	10,021,820

[10] Source: CAPMAS, Census of population activities of the Governorates, Cairo Governorate, 2018

Maadi	-	43,960	44,596	88,556

7.4 Economic Status

Cairo has 9,134 registered industrial facilities covering sectors such as food & beverage, spinning & textile, wood products, paper products, basic chemicals, building materials and basic metals. According to information provided by the governorate, 31.94 % of the registered industrial facilities in Cairo fall under the spinning and textile sector. It is reported that 27.57 % of the workforce registered as employees in industrial facilities in Cairo work in the field of engineering industries. Of the workforce registered in handicraft workshops, 28.76% fall under the spinning and textile sector.

Maadi is Cairo's least densely populated neighbourhood, and much of it is populated by well-to-do Egyptians and expats, many of whom are associated with Maadi's embassies, ambassadorial houses, and foreign enterprises such as the US Agency for International Development's Cairo office. In addition to the embassies and foreign enterprises, the banks of the Nile in Maadi are also the headquarters of several luxury hotels, such as the Cairotel Hotel, the Sofitel Hotel, nightclubs and famous restaurants. Among the most significant buildings in Maadi are the Sadat Academy for Administrative Sciences, and the Maadi Library. Among the most famous streets are Al-Nasr Street in New Maadi, Street 9, Hassanein Desouki Street, and Algeria Street, where there are many shops and workshops for limestone, marble and thermal stone in Maadi Garden. Maadi is home to many major restaurants, outlets and chains as well as a variety of high-end clothing shops, and other retail businesses, many of which are located along the locally famous "Road 9", Nasr st, or new Maadi as well as Maadi's original "downtown" located just south of the Maadi Metro stop on the east side of the track. Road 9 still remains a hub for both locals and expats with its diverse dining options as well as coffee shops and even bookstores.

Maadi is still preferred by foreign communities, as large numbers of them still live in it due to its Western character, which is evident in the scattered foreign educational institutions as well as sports clubs, social and religious institutions and places Entertainment and restaurants that contribute to the feelings of alienation from the foreigner residing in Egypt. Many countries also preferred to build their embassies there, as Maadi today contains 26 foreign embassies.

Although Maadi is considered one of the high-end places in Cairo, it has some average areas such as Saqr Quraish , which is known for its many markets and population density. In general, Maadi is characterized by a clear mixture of members of the upper and middle classes.

Maadi hosts a large number of oil companies, the most famous of which is the Gulf of Suez Petroleum Company, which is called GUPCO for short, which is the largest petroleum company in the Republic, as well as some other companies such as Khaleda Petroleum and Qarun. It also has a giant communication station, and New Maadi is distinguished by the presence of Al-Nasr Street.

7.5 Human Development Status

The education and employment status and poverty index should be indicated in order to determine the current socio-economic conditions of the community members in the Project area.

7.5.1 Education

The following table shows the educational status in Cairo in terms of the number of learners at different levels, in addition to the illiteracy rate. The presented information about Maadi was obtained from the CAPMAS 2019 issue of the 2017 consensus which included the number of employed Egyptians in Maadi according to their education level.

Table 7-3 Eduacation Status in Cairo Governorate

Item	Illiterate	Literate	Literacy classes	Upper middle education	University education	Postgraduate education
Cairo Governorate						
Maadi	964	20,610	409	4,778	14,287	1,057

Source: CAPMAS Statistical Yearbook 2021.

Table 7-4 Education Data in Cairo Governorate

Item	Schools	Classes	Male students	Female students	Male teachers	Female teachers
Cairo Governorate	88	412	1,924	1,273	29,112	61,057

Source: CAPMAS Statistical Yearbook 2021.

The following table provides the type and number of educational facilities in Cairo, as well as the number of enrolled students and number of teachers for each type of education.

Table 7-5: Basic Education in Cairo Governorate

Type of Education	N. of Schools	N. of Classrooms	N. of Male Students	N. of Female Students	N. of Male Teachers	N. of Female Teachers	Classrooms Capacity
Pre-Primary	1201	5141	85929	80174	83	43749	32
Primary	1505	24328	535894	508802	10456	23776	42
Preparatory	1136	11726	236789	120611	10636	13002	39
High School	646	7028	123184	132329	7871	7005	36
Industrial Education	104	2034	41340	17799	5313	3213	41
Trading Education	81	1227	17552	28860	718	1253	40
Agricultural Education	-	-	-	-	-	-	-
Special Education	121	625	3008	2158	329	929	8

Source: CAPMAS, Pre - University Education Statistics, 2016

Cairo is the largest governorate in the population compared with other governorates; thus has the largest number of educational establishments, both in university and pre-university education, In addition to having many private universities and institutes.

Educational institutes in Maadi include:

7.5.2 Employment

The following table presents information on employment in Cairo (Cairo Governorate- Egypt Description by Information, 2017).

Table 7-6: Employment in Cairo

Work Status	Project Area
	Cairo Governorate
Labor force	32.71%

Work Status	Project Area
	Cairo Governorate
Rate of unemployment	17.42%
Unemployed males of total unemployed persons	62.18%
The increase in labor force	3.21%

The following table shows the differences between males and females in the distribution of the labor force in Cairo.

Table 7-7: Distribution of Cairo Governorate Population by Work Status and Gender

Gender	Indicators	Ratio
Males	% of individuals 15 years + who joined labor force	37.8 %
	% of adult self-employed from total labor force	8.5 %
	% of unpaid males employed from total employed males	0.2 %
	Unemployment rate	62.2 %
Females	% of females 15 years + who joined labor force out of total females	31.2 %
	% of females self-employed from total employed females	5.2 %
	% of unpaid females employed from total employed females	0.2 %
	Unemployment rate among females	37.2 %

Source: CAPMAS Poverty Mapping data 2015

7.5.3 Poverty Index

The percentage of poor people in the project area is very limited, and the majority of households in the project area are not below the poverty line based on visual observations.

Table 7-8: Poverty in Cairo

Population	Total Area (km^2)	Percentage of Poor People	Poverty gap
10,021,820	3,085.10	39.7 %	11.8 %

Source: CAPMAS Income and Expenditure Survey, 2018

7.6 Public Facilities

According to the statistics of the DHA in Cairo, there are 86 hospitals in Cairo with a total of 20,381 beds, in addition to a number of private health services spread throughout the Governorate. (Table 7-9)

Table 7-9: Healthcare Services in Cairo

Hospitals and Healthcare Service Units	Quantity
Public and Central Hospitals	14
Educational hospitals and institutes	8

Hospitals and Healthcare Service Units	Quantity
Health Insurance Hospitals	8
University Hospitals	32
Private hospitals	350
General Secretariat of Specialized Health Centres	15
Hemodialysis Centres	99
General Secretariat for Pyschotherapy	3
Police and prison hospitals	4
Medical treatment institutions	6

Source: Cairo Governorate Information Center, 2018

The following table shows the available healthcare professionals in Cairo, according to DHA data.

Table 7-10: Healthcare Professionals in Cairo

N. of Doctors	N. of Pharmacists	N. of Dentists	N. of Nurses
8,533	3,003	3,408	8,652

Source: CAPMAS, Census of Population Activities in Governorates, Arab Republic of Egypt, 2017

7.7 Basic Infrastructure

According to data available from the governorate, a brief summary of basic infrastructure services available in Cairo is presented in the table below (Cairo Governorate- Egypt Description by Information, 2017).

Table 7-11: Basic Infrastructure in Cairo

Service	Description
Water	• 18 treatment plants serve Cairo. The district's water is supplied by the Maadi WTP which had undergone upgrades in 2021 increasing its capacity to 1.2 million m3/day.
Sanitation	• 12 wastewater treatment plants serve Cairo, in addition to six main pumping stations and 96 sub-pumping stations. • The Maadi district is served by the Gabal Asfar WWTP location in the North of Cairo. The WWTP has undergone and is still undergoing expansions to increase its treatment capacity and improve treatment producing effluent with better quality. The latest expansion has rendered the WWTP with the capacity to treat 2.5 million m3/day • Wastewater treatment capacity in Cairo is 4.54 million m^2/day • Sewer network covers 94% of the governorate
Electric Supply (Network)	• 60.09 % of total consumed electricity in Cairo is for lighting • Cairo Company for Electricity Production is located in Cairo and serves Greater Cairo governorates. • South Cairo Company for Electricity Distribution and North Cairo Company for Electricity Distribution are located in Cairo; they both serve Greater Cairo governorates.
Roads	• 343.44 persons/km is the per capita share of paved roads in Cairo governorate in 2011/2012
Communications	• The IT centres initiative was launched with an aim to establish new IT centres or to develop current IT club services to provide new community services. This initiative covered 14 governorates

	• Telephone exchanges in the governorate represent 3.76% of the total exchanges nationwide

7.8 Community Health and Safety

The data for the project area could not be obtained, so the following information is for Cairo and Giza governorates. The situation of the public healthcare system is considered weak due to low investments in the system by the government (only 1.5% of GDP)[11] resulting in underfunding and weak staffing. Public health care is significantly more available in the capital than in rural areas. Private healthcare facilities are usually of higher quality but are still too expensive for the middle class. It is important to note that Egypt has recorded remarkable achievements in improving the health status of its citizens by significantly reducing the mortality rate, maternal mortality, child mortality, and the under-five mortality rate, and increasing life expectancy[12].

The expected impacts on community health and safety are mainly due to air pollution and potential traffic accidents. Air pollution in Egypt remains a major health concern. Several studies have shown a relationship between air quality in Egypt and an increase in chest problems in residential areas close to industrial areas. However, exact percentages are not provided.

The World Health Organization estimates that the death rate due to traffic accidents in Egypt is 9.7 per hundred thousand people[13] as the total number of accidents in 2018 showed a decrease of 23.6% from the previous year[14]. While the number of accidents is on a positive note, the fatality rate is more than 3 times that of the UK, indicating significant room for improvement. The large number of traffic accidents is mainly due to human errors and non-compliance with proper driving practices such as maintaining a safe distance or adhering to speed limits.

7.9 The Status of Women

The following table shows the status of women in Cairo (Cairo Governorate- Egypt Description by Information, 2021).

Table 7-12: Status of Women - Cairo Governorate

Item	Unit	Value
Females (% of total population)	%	48.2
Females (% of total labor force)	%	19.9
Females (% of total employed persons)	%	16.71
Female unemployment rate	%	25.6
Female illiteracy (% of total females)	%	18.2
Females enrolled in illiteracy eradication classes (% of total enrolment)	%	18.2
No. of females who have attained reading and writing (% of total persons who have their illiteracy eradicated)	%	20.6
Females in higher education (% of total no. of enrolled students in higher education)	%	45.38

[11] Healthcare in Egypt, Allianz Care, 2019. https://www.allianzcare.com/en/support/health-and-wellness/national-healthcare-systems/healthcare-in-egypt.html
[12] World Health Organization. Egypt, 2014. https://www.who.int/countries/egy/en/

[13] Death on the Roads, WHO, 2018. https://extranet.who.int/roadsafety/death-on-the-roads/#country_or_area/EGY
[14] CAPMAS: Car Accidents in Egypt Down by 23.6 % in 2018, EgyptianStreets, 2018. https://egyptianstreets.com/2019/04/14/capmas-car-accidents-in-egypt-down-by-23-6-in-2018/

Item	Unit	Value
Female trainees (% of total trainees in vocational training centers)	%	19.15
Female researchers (% of total researchers in research centers)	%	54.17

Source: Cairo Governorate- Egypt Description by Information, 2021

7.10 Cultural Heritage

There is no evidence of archaeological sites within the project's impact or immediate surroundings. The closest site that could be identified using Google Earth is the National Museum of Egyptian Civilization located almost 5 km from the site (Figure 7-3). The hanging Church is also located 6 km from the site (Figure 7-4).

Figure 7-3 Distance between the Project Site and The National Museum of Egyptian Civilization

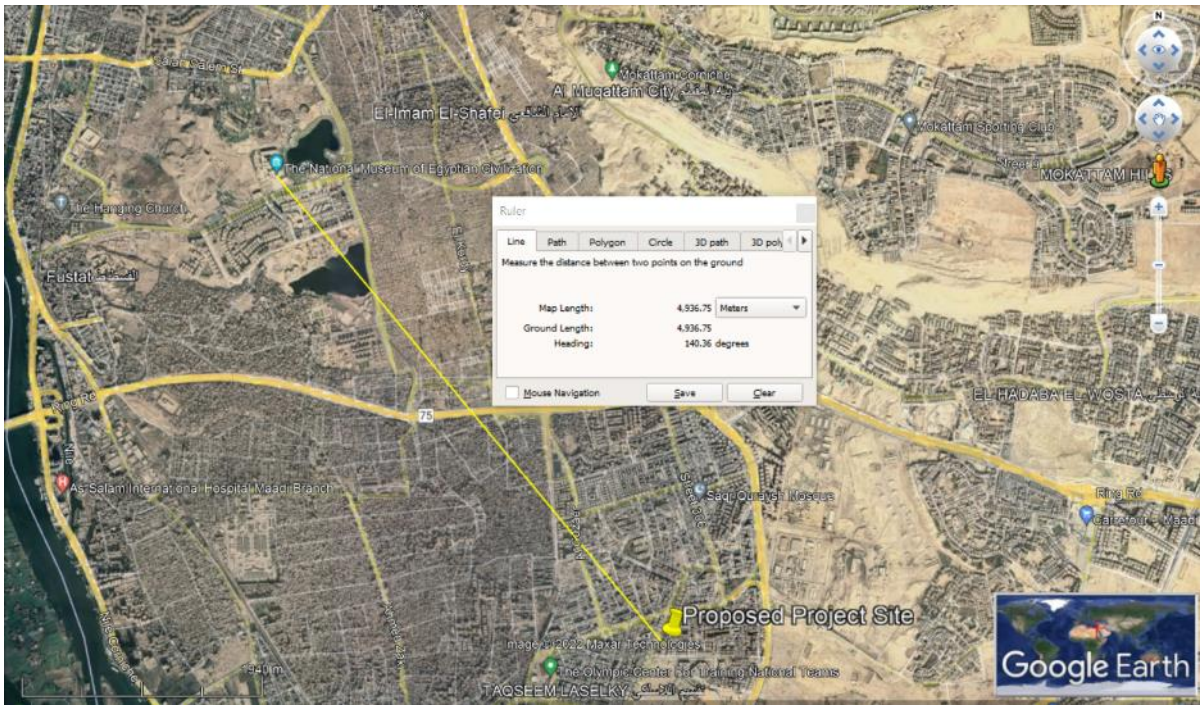
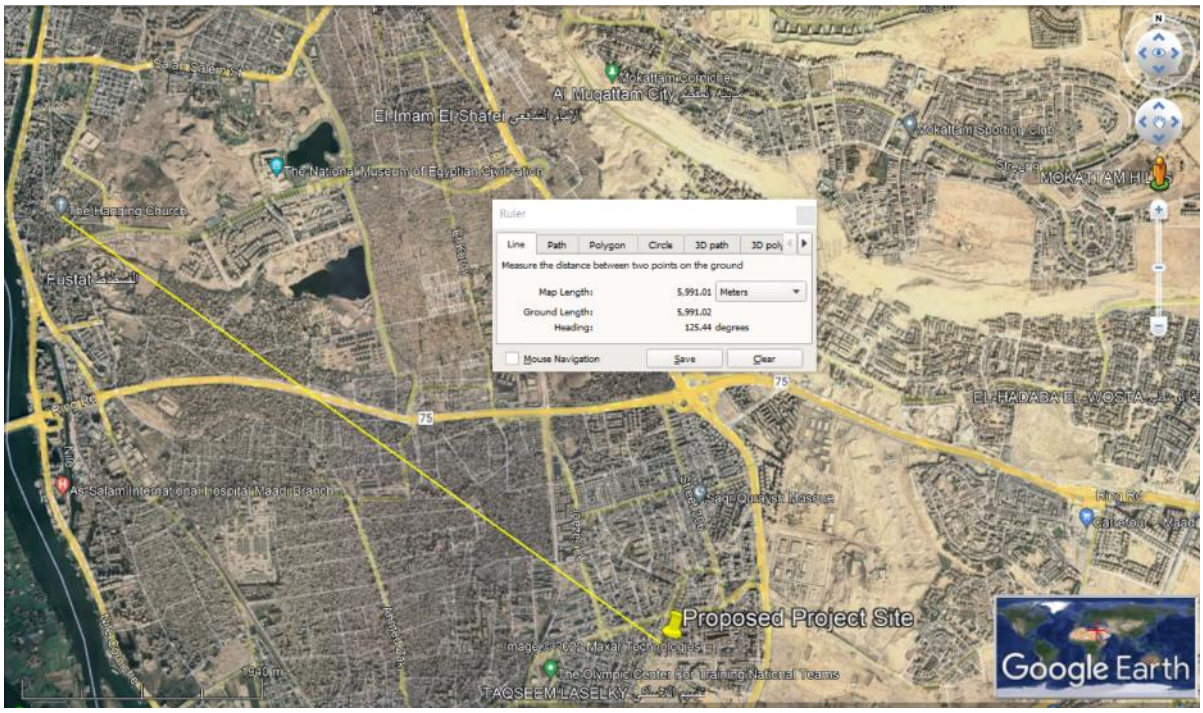


Figure 7-4 Distance between the Project Site and the Hanging Church



8 PROJECT ALTERNATIVES

8.1 Introduction

EEAA guidelines for impact assessment specifies that alternatives to the proposed Project should be considered including such aspects as location, design, and technology. The 'No Action' alternative, including the consequences of not carrying out the proposed Project, is also to be considered. For the proposed Project the following alternatives have been considered: 'No Action'; Location; and Design and Construction.

8.2 No Action Alternative

The proposed site for the Project is located in an area that has been designated for the establishment of private sector projects. No significant environmental or social benefit has been identified for leaving the site in its current state. Moreover, undeveloped empty land could be taken over by squatters and informal vendors which would result in complications with land acquisition when the land is finally ready to be developed. Conversely, it is anticipated that the development of the Project will contribute positively to health sector reform, skill development, as well as improve the regional economy and provide employment opportunities. Therefore the 'no action' alternative is seen as neither practical nor desirable.

8.3 Project Location

Several locations were initially considered for the Project. However, the current site was selected on the following merits:

Criteria	Rationale
Environment	Project site is located in an area with low biodiversity value
	No sensitive receptors, such as surface water bodies, were identified within the vicinity of the selected site (within a 1 km radius)
	No endangered species have been identified within the selected site and/or in proximity to it (within a 10 km radius)
	No protected areas are located in the vicinity of the selected site (within a 10 km radius)
Social	The site is in in proximity to main roads and highways allowing easy vehicular access
	It is located in an area covered by public transportation services
	It is located in an area with residential options for staff and workers
	It is located in an area designated for private sector projects therefore complement the overall zone planning
	It is located in an area that will not require the resettlement of residents and therefore reduce the overall social impact of the Project
	It is located in an area close to industrial zones and therefore, will improve the area's potential for health care provision in case of injuries or accidents
Economic	It is located in an area with existing infrastructure and utilities and therefore reduce the cost of installing the required infrastructure
Technical	Site settings would not require additional earthworks and significantly reduce the need for vegetation clearing
	The project site already has access to the existing municipal sewer and water networks which will avoid additional engineering considerations during construction
	The project site will have direct access to the existing power supply and therefore facilitate the construction of facilities without having to install additional transmission lines and other electrical infrastructure
	The project site provide easy accessibility to heavy machinery and materials for construction

	The Project site is adjacent to the existing Andalusia Maadi hospital which will facilitate management and logistics during the operation of the hospital.

8.4 Design and Construction

The design and construction of the hospital, including the patient rooms, emergency rooms, operating rooms, clinics all other structures will be based on accepted industry best practice. As such other design options or technologies are not considered practical or feasible. Conventional building materials (sand, gravel, cement, steel, etc.) will be used for the construction of the Project. Andalusia will, as far as practicably feasible, avoid the use of toxic and hazardous building materials such as asbestos, lead, polyvinyl chloride (PVC), polychlorinated biphenyls (PCBs) and others. Construction of the facility will be carried out in accordance with the Egyptian Building Code. Andalusia will consider the use of non-conventional, more sustainable building materials, as well as consider the installation of renewable energy as part of their energy mix for the Project, for which separate feasibility and economic assessment will be completed.

9 IMPACT ASSESSMENT

9.1 Assessment of Impact Significance

As part of this ESIA process, potential impacts associated with the construction and operation of the hospital need to be identified. In this chapter impacts are identified and semi-quantitatively assessed to determine the likely environmental or social significance.

The criteria for determining significance are specific for each environmental and social aspect and will be defined prior to the presentation of the assessment. In broad terms, it can be characterised as the product of the degree of change predicted (the magnitude of impact) and the value of the receptor/resource that is subjected to that change (sensitivity of receptor). For each impact the likely magnitude of the impact and the sensitivity of the receptor are defined, quantitatively to the extent possible. Generic criteria for the definition of magnitude and sensitivity are summarised below.

This section of the report will focus on the identification and assessment of potential impacts, which are anticipated from the construction and operation phases of the Project. The decommissioning phase has not been considered in this section given the expected longevity of the Project. The decommissioning phase will require a separate ESIA.

It should be mentioned that some of these impacts can be avoided in early stages of the Project's life cycle through appropriate design, construction and operation management procedures. The process of identifying potential environmental and social impacts was based on the following documentation:

- Collection of baseline information with respect to environmental and social settings; and
- Literature review of similar projects.

9.2 Impact Characterization

Impact Magnitude

The magnitude of an impact is a function of the duration, extent, intensity and probability, where each parameter will be rated in terms of importance on a scale from one to four, as described in Table 9-1 below. The magnitude will be defined as the whole number derived by the weighted average of the duration, extent, intensity and probability (rounding to the nearest whole number) where the magnitude is rated on a scale from one to four as follows:

(1) Negligible – the receiving environment is not affected
(2) Low – a small portion of the receiving environment is affected
(3) Medium – a moderate portion of the receiving environment is affected
(4) High – a large portion of the receiving environment is affected

Table 9-1: Impact Magnitude

Duration	(1) Temporary – impacts are predicted to be of short duration (2) Short-term – impacts that are predicted to last only for the duration of the construction phase (3) Long-term – impacts that will continue for the life of the Project only (4) Permanent – impacts that will bring about a permanent change
Spatial	(1) On-site – impacts that are limited to the boundaries of the Project. (2) Local – impacts that affect an area in a radius of 20km around the Project. (3) Regional – impacts that are experienced at a regional scale beyond 20 km and determined by administrative boundaries (4) National – impacts that are experienced on a national level
Intensity	(1) Negligible – impact on the environment and/or wellbeing of group of people or businesses is not detectable

	(2) Low – impact on the environment and/or wellbeing of group of people or businesses occurs but does not affect natural processes and function (3) Medium – impact causes natural functions and processes to continue in a modified manner as a result of the altered environment and/or wellbeing of group of people or businesses (4) High – impact alters natural processes and functions causing them to cease either temporarily or permanently
Probability	(1) Rare (25% chance) (2) Possible (50% chance) (3) Likely (75% chance) (4) Sure (100% chance)

Receptor Sensitivity

The sensitivity of a receptor is based on the activities of each phase of a project and 1) the vulnerability of the receptor and 2) how the receptor reacts and/or is affected by such activities. A receptor is considered to have low sensitivity when the effect of an impact is more readily absorbed and easily mitigated; medium sensitivity when there is a limitation in absorbing and mitigating the effect; and highly sensitive when the effect of an impact cannot be absorbed and mitigated. The ranking of a receptor's sensitivity of the receptor is as follows:

Category	Description
High	Receptor (human, physical or biological) with little or no capacity to absorb proposed changes and/or minimal opportunities for mitigation.
Medium	Receptor with little capacity to absorb proposed changes and/or limited opportunities for mitigation.
Low	Receptor with capacity to absorb proposed changes and/or reasonable opportunities for mitigation.

Impact Significance

The significance of an impact is the function of the magnitude of the impact and the sensitivity of the receptor affected by the impact. The following matrix presents the significance (rated on a scale from one to four) of impacts based on their magnitude and the receptor's sensitivity.

		Magnitude of Impact			
		Negligible (1)	**Low (2)**	**Medium (3)**	**High (4)**
Sensitivity	**Low**	Insignificant (1)	Insignificant (1)	Insignificant (1)	Minor (2)
	Medium	Insignificant (1)	Minor (2)	Minor (2)	Moderate (3)
	High	Minor (2)	Moderate (3)	Moderate (3)	Major (4)

Insignificant: an insignificant impact is one that does not affect the receptor in any way as a result of a project activity and is deemed to create a negligible change from background conditions.

Minor: an impact having minor significance is one with a small magnitude that will have an effect on the receptor but which will be within acceptable limits.

Moderate: An impact having moderate significance is one which is within acceptable limits and standards and must be effectively managed to reduce the impact to a level that is as low loss as reasonably practicable (ALARP).

Major: An impact having major significance is one which may exceed acceptable limits and standards and which may affect highly sensitive receptors.

9.3 Environmental Impacts during the Construction Phase

9.3.1 Ambient Air

There is the potential for air quality impacts as a result of emissions from construction activities, the movement of vehicles on- and off-site, and potentially from nuisance dust. Given the relatively limited scale of the development, the maximum number of on-site vehicles and machinery usage on any one-day period during the construction

phase is anticipated to be low. As with any construction site, dust is expected to be generated by earthworks (excavation, levelling… etc.) and construction.

This may become a health hazard to site workers, and the surrounding community, and especially sensitive groups who are more likely to be impacted by poor air quality. The main potential air quality pollutant during construction is the generation of dust and PM10 related to earthworks, the movement of traffic on unsurfaced roads and the loading/unloading of materials. Air quality will be affected by exhaust emissions of particulate matter, NOx, SO2, CO and benzene from diesel and petrol-powered equipment, vehicles and machinery during the construction phase. The illegal burning of solid waste by construction workers onsite may generate particulate matter, NOx and associated dioxins.

Construction activities with the potential to emit dust are generally short term. Often emissions are not continuous and fluctuate depending on the source, type of activity being undertaken and prevailing weather conditions. The dust generated from these activities is generally comprised of coarse particles, which results in localised effects.

Duration	Spatial Extent	Intensity	Probability	Magnitude	Receptor Sensitivity	Impact Significance
(2) Short-term – impacts that are predicted to last only for the duration of the construction phase	(2) Local – impacts that affect an area in a radius of 20km around the Project.	(3) Medium – impact causes natural functions and processes to continue in a modified manner as a result of the altered environment and/or wellbeing of group of people or businesses	(4) Sure (100% chance)	(4) High	High	(4) Major
Mitigation Measures	• Ensure all areas where excavation and earth works are taking place are cordoned off • Make public announcements informing the surrounding community, of construction works timing and location • Perform construction works during the daytime only • Ensure that ground in areas that are heavily used by vehicles and machinery are well compacted • Soil resulting from earthworks will be stockpiled in suitable areas with proper dust control measures such as covering • Regular wetting of dusty surfaces of the construction areas will be performed • Implementation of dust suppression measures such as water spraying on roads, observing speed limits and track maintenance • Cover vehicles transporting material that could disperse dust and minimize drop heights when loaders dump soils into trucks • Perform regular maintenance and monitoring of all fuel-burning equipment • Ensure all workers wear appropriate PPE to avoid the inhalation of dust and gases • No burning of waste, such as plastic bags, cement bags and litter, is permitted on-site • Ensure that equipment/machineries are turned off when not in use • Ensure that vehicles and trucks comply with the limits for exhaust emissions set by Prime Minister Decree 1095/2011 • Power generation units shall comply with the emission limits set by Decree 964/2015 amending Law 4/1994 for diesel fuelled engines Additional mitigation measures for PM10 emissions may include the following: • Dust prone materials, must be sheeted or prevented in other appropriate ways from becoming wind-borne • Soil and other earthen stockpiles, and other dust generating materials, that are to remain undisturbed for some time, should be covered or otherwise stabilised to minimise wind blown dust • Where activities could generate dust clouds, dust suppression techniques must be adopted, for example water sprays and dampening of access roads and the frequency of spraying will be determined by the site manager on a site specific basis. Suppression techniques should be employed more frequently during dry weather • Materials kept at site, including the stockpiling of soils, should be protected by appropriate measures, for example membranes or spraying with a binding agent • All containers will be covered or enclosed to prevent escape of dust and waste materials during loading and transportation • Efforts should be made to use electricity from the grid and use of diesel generators should be minimised • Diesel generator sets should be regularly maintained to minimise the emissions • Soil stockpile heights should be kept to a minimum height with grading to stabilise side slopes to reduce the risk of erosion • Activities will be planned to ensure that, as far as practical, particularly dusty activities are not carried out in unsuitable weather conditions (e.g. dry/windy) unless suppression is in place • All working areas should be kept in a clean and tidy condition • Materials will be positioned away from residential areas, places of public access or drains					

Residual Impact Post Mitigation	(3) Moderate

9.3.2 Noise

During the construction activities of the Project, noise will be generated through various activities including, but not limited to power generation, ground breaking, excavations, welding, heavy equipment, vehicle movement and building construction. The noise generated will be short term and only during the daytime to avoid affecting the local community during the night time. Based on visual observations, noise generated from the Project site is expected to impact the surrounding community given its proximity.

Duration	Spatial Extent	Intensity	Probability	Magnitude	Receptor Sensitivity	Impact Significance
(2) Short-term – impacts that are predicted to last only for the duration of the construction phase	(2) Local – impacts that affect an area in a radius of 20km around the Project.	(3) Medium – impact causes natural functions and processes to continue in a modified manner as a result of the altered environment and/or wellbeing of group of people or businesses	(4) Sure (100% chance)	(3) Medium	High	(3) Moderate
Mitigation Measures	• Perform construction works during the day • Include signage in areas where high noise emitting activities will be taking place • Make public announcements informing the surrounding community construction works timing and location • Fixed and mobile equipment (e.g., generators) will be located away from sensitive receptors • Ensure that generators, pile driving machines, pneumatic tools and other heavy machinery shall be fitted with the appropriate noise filters in the form of silencers/mufflers • Elevated noise areas and equipment emitting elevated noise emissions should be identified and all persons working on/in the elevated noise area should be provided with hearing protection • Rubber or other suitable material padding will be provided to fixed equipment so that vibration impact can be absorbed and be prevented from travelling • Regular maintenance of heavy machinery and equipment shall take place • Machinery and equipment not in use will be switched off • Avoid high noise emitting activities after sunset and before sunrise • Avoid transporting materials to the site after sunset and before sunrise • Consider alternative routes that avoid residential areas					
Residual Impact Post Mitigation						(2) Minor

9.3.3 Water

Construction and domestic water during the construction phase will be supplied via tankers delivering water from the water treatment plant to the Project site. An estimated 10 m^3/day per site will be consumed throughout the construction phase, which is expected to continue for a duration of 2.5 years. This consumption may further be increased as a result of poor management practices, such as damaged water containers, leaking water faucets, excessive washing and cleaning. Despite this, water consumption by the Project is not likely to have an impact on surrounding water resources and/or the water supply to the surrounding communities.

Duration	Spatial Extent	Intensity	Probability	Magnitude	Receptor Sensitivity	Impact Significance
(2) Short-term – impacts that are predicted to last only for	(2) Local – impacts that affect an area in a	(2) Low – impact on the environment and/or wellbeing	(2) Possible (50% chance)	(2) Low	Medium	(2) Minor

the duration of the construction phase	radius of 20km around the Project.	of group of people or businesses occurs but does not affect natural processes and function				
Mitigation Measures	• Ensure that construction activities are carried out in a manner so as to minimise water consumption as far as practically feasible • In order to minimize water consumption, any possible reuse of grey water, previous separate collection and any treatment, shall be considered for dust suppression • Water containers/tanks and hoses/connections shall be regularly inspected to ensure they are waterproof and to promptly detect any water leakage • Ensure that washing/cleaning activities (e.g. machineries washing, toilets flushing/cleaning, etc.) are carried out through methodologies requiring low water consumption or dry cleaning if possible • Install water saving fittings (taps, showerheads, urinals, etc.) in toilets of site offices • Monitor and record supplied water and water consumption quantities on a regular basis • Discharge of wastewater to the soil or groundwater shall be avoided at all costs • Use synthetic turfs for any planned landscapes in the site offices					
Residual Impact Post Mitigation						(1) Insignificant

9.3.4 Waste

Types of non-hazardous waste anticipated to be generated during this phase of the Project may include excavated soil, glass, metals, plastic, wood and cardboard. 0.5 tons are expected to be generated daily by the Project during the construction phase. Hazardous waste likely to be generated during this phase may include concrete, empty fuel/oil containers, contaminated soil, empty paint and solvent cans, batteries, fluorescent light bulbs, mercury switches, aerosol cans. The improper segregation, collection, storage and disposal of non-hazardous, construction waste and hazardous waste will increase the amount of waste directed to landfills, as well as result in the potential disposal of hazardous wastes into municipal landfills, causing potential soil and groundwater contamination. Exposure to poorly managed hazardous waste by staff or workers onsite may result in irritations to skin and eyes, and cause headaches and dizziness.

Duration	Spatial Extent	Intensity	Probability	Magnitude	Receptor Sensitivity	Impact Significance
(2) Short-term – impacts that are predicted to last only for the duration of the construction phase	(2) Local – impacts that affect an area in a radius of 20km around the Project.	(3) Medium – impact causes natural functions and processes to continue in a modified manner as a result of the altered environment and/or wellbeing of group of people or businesses	(3) Likely (75% chance)	(3) Medium	High	(3) Moderate
Mitigation Measures	• Ensure all construction waste is stored onsite and properly disposed of at licensed facility and transported by a licensed contractor • Suitably covered general waste receptacles must be placed on a drip tray and must be available at all times as to minimise waste and conveniently placed for the collection of waste every day from site for disposal at a licensed waste facility • Bins should be clearly marked and lined for efficient control and safe disposal of waste • Different waste bins, for different waste streams must be provided to ensure correct waste separation • Waste receptacles should be removed out on a daily basis to prevent any windblown waste and/or visual disturbance • All general waste must be removed from site on a daily basis and disposed of at a registered or licensed disposal facility. Records of appropriate disposal must be maintained onsite. Under no circumstances are the waste receptacles be left or stored onsite • Materials from any earthworks must be recycled and re-used where possible					

	• Concrete mixing must take place within a designated area at each site. Areas where concrete is mixed must be cleaned up and the apparatus removed at the end of each day. Concrete mixing is to be undertaken on an impervious surface and/or drip tray and any run-off contained. Concrete mixing must be controlled and measured to activity requirements to prevent waste • Hazardous waste is not to be mixed or combined with general waste earmarked for disposal at a municipal landfill site • Hazardous waste must be disposed using techniques appropriate to the situation as per the Waste Management Plan to be developed for the project. The HSE Manager must identify an approved waste disposal site at the inception of the Project • Hazardous waste bins must be clearly marked and stored in a contained, restricted area (or located on an impermeable surface) and covered with a lid • All hazardous waste must be removed from site frequently and disposed of at a registered or licensed hazardous disposal facility. Records of appropriate hazardous waste disposal certificates must be maintained onsite. Under no circumstances are the hazardous waste receptacles to be left or stored on-site • It may be feasible for the waste to be transported to a central point from where it can be collected in bulk by the waste disposal company. It should however be noted that transport of hazardous materials must be done in accordance with applicable legislative control
Residual Impact Post Mitigation	(2) Minor

9.3.5 Soil

Negative impacts on soil may result from activities such as heavy machinery movements, concrete mixing, excavation of trenches and cable laying. Impacts are also associated with the inappropriate handling and disposal of construction or demolition waste (solid & hazardous) generated from soil excavations, accidental spills and the improper management and storage of paints, oils, solvents and fuels causing surficial soil contamination. The improper placement of generators (i.e. without drip trays) and the emptying of wastewater from septic tanks (10 m^3 of wastewater are estimated to be generated daily onsite) by suction trucks may also cause surficial soil contamination. Non-hazardous and hazardous waste improperly stored onsite, i.e. directly on the ground surface, may cause soil contamination caused by leachate percolation. Based on visual observations, soil at the Project site is not considered to be of high nutrient value given its sandy, gravel composition.

Duration	Spatial Extent	Intensity	Probability	Magnitude	Receptor Sensitivity	Impact Significance
(2) Short-term – impacts that are predicted to last only for the duration of the construction phase	(1) On-site – impacts that are limited to the boundaries of the Project.	(2) Low – impact on the environment and/or wellbeing of group of people or businesses occurs but does not affect natural processes and function	(3) Likely (75% chance)	(2) Low	Medium	(2) Minor
Mitigation Measures	• No hazardous liquids (such as paints and solvents) are to be stored directly on the ground surface during construction • Any generators on site must be placed on a drip tray as to prevent soil or surface water contamination. • Designate areas for the proper storage and handling of paints, oils, lubricants and fuels • Re-fuelling and maintenance areas should include some form of secondary containment to avoid spillages • Spill kits are to be distributed around the site in strategic areas to allow for speedy spillage cleanup • All toilets onsite shall be connected to a septic tank to be established onsite. Its capacity shall be at least 110% of the estimated quantity of sewage/wastewater to be collected • Regular inspection on the tanks and pipes shall be performed to ensure there is no leakage or overflow • Regular inspections and maintenance of septic tanks shall be ensured in order to verify and allow effective operation of the sewage collection system • Wastewater is to be collected by a licenced contractor and discharged into a licensed location (wastewater treatment plant or discharge point) • Documentation of wastewater collection and disposal shall be maintained and kept on site					
Residual Impact Post Mitigation						(1) Insignificant

9.3.6 Biological Environment (Flora and Fauna)

No endangered species of flora and fauna are known to be present at the site. The site was observed to be of low biodiversity value, given its location in a desert environment with no presence/evidence of fauna (with the exception of stray dogs and cats as well as birds) and no vegetation cover. Additionally, the site has been designated by the governorate's authority for building purposes ensuring it is not of an ecological value.

Duration	Spatial Extent	Intensity	Probability	Magnitude	Receptor Sensitivity	Impact Significance
(2) Short-term – impacts that are predicted to last only for the duration of the construction phase	(1) On-site – impacts that are limited to the boundaries of the Project.	(2) Low – impact on the environment and/or wellbeing of group of people or businesses occurs but does not affect natural processes and function	(3) Likely (75% chance)	(2) Low	Medium	(2) Minor
Mitigation Measures	• Limit all construction activities to the boundaries of the working area; reinstate any damage caused by any excursions beyond this					
Residual Impact Post Mitigation						(1) Insignificant

9.3.7 Land Use

Impacts on land use during the construction phase will be mainly a result of site preparations. Impacts will be associated to activities such as, levelling and trenching. These activities are not likely to have an impact on the current land use given it is desert land, and is not used by informal land users. No evidence of land contamination was observed onsite. Impacts on land use is insignificant given the site is already existing or located in an area designated by the authorities for building purposes.

Duration	Spatial Extent	Intensity	Probability	Magnitude	Receptor Sensitivity	Impact Significance
(2) Short-term – impacts that are predicted to last only for the duration of the construction phase	(1) On-site – impacts that are limited to the boundaries of the Project.	(1) Negligible – impact on the environment and/or wellbeing of group of people or businesses is not detectable	(1) Rare (25% chance)	(1) Negligible	Medium	(1) Insignificant
Mitigation Measures	None					

9.4 Socio-Economic Impacts during the Construction Phase

Potential Positive Socio-Economic Impacts

9.4.1 Employment, Skill Development and Economic Stimulus

The construction of the Project allows for the creation of local employment opportunities, as the Project is expected to offer a total of approximately job opportunities for 90-120 individuals daily for the construction activities. This phase of the Project may also allow for the purchase of supplies from the local market, thereby contributing to the local economy in at the Project site. Opportunities for skill development amongst locals in the field of construction and renovation are likely to be created.

Potential Negative Socio-Economic Impacts

9.4.2 Project Induced In-Migration

The construction phase may potentially attract workers from outside of the Greater Cairo Region (migrant workers). Should migrant workers be recruited, they shall require accommodation which may lead to an increase in local rental prices due to the increase in demand. Additionally, there may be a feeling of resentment towards

the Project given lost employment opportunities for locals, which may negatively impact the Project's progress and its acceptance by locals.

Duration	Spatial Extent	Intensity	Probability	Magnitude	Receptor Sensitivity	Impact Significance
(2) Short-term – impacts that are predicted to last only for the duration of the construction phase	(2) Local – impacts that affect an area in a radius of 20km around the Project.	(3) Medium – impact causes natural functions and processes to continue in a modified manner as a result of the altered environment and/or wellbeing of group of people or businesses	(2) Possible (50% chance)	(2) Low	High	(3) Moderate
Mitigation Measures	• Prepare job descriptions for the types of employment and supply chain opportunities to be provided to/by local people and businesses for the construction phase of the Project • Assign a community liaison officer for the Project • Prepare a stakeholder engagement plan which includes pre-construction information meetings with locals to discuss potential impacts and mitigations, as well as employment opportunities • Prepare a workers accommodation management plan in the event of employing a significant number of migrant workers. The plan should establish requirements for accommodation selection as well as an inspection plan to ensure the provided accommodation is up to standard.					
Residual Impact Post Mitigation						(2) Minor

9.4.3 Child, Forced Labour, Gender Based Violence, Sexual Harassment, Exploitation and Abuse

Andalusia already have their stringent Code of Conduct in both Arabic and English that has clauses on child, forced labour, gender-based violence, sexual harassment, exploitation and abuse. However, the potential for suppliers and contractors to employ children or force labourers to work, by means of retaining wages and/or identification papers, as well as harmful acts directed at an individual based on their gender such as gender-based violence (GBV), asexual harassment, exploitation and abuse would result in violation of applicable national legislations (such as Law 12/2003 on labour) and AfDB OS, and may have a negative impact on the Project's acceptance and reputation.

Duration	Spatial Extent	Intensity	Probability	Magnitude	Receptor Sensitivity	Impact Significance
(2) Short-term – impacts that are predicted to last only for the duration of the construction phase	(2) Local – impacts that affect an area in a radius of 20km around the Project	(3) Medium – impact causes natural functions and processes to continue in a modified manner as a result of the altered environment and/or wellbeing of group of people or businesses	(2) Possible (50% chance)	(2) Low	High	(3) Moderate
Mitigation Measures	• Ensure the Code of Conduct is delivered as part of the induction for all workers • Ensure contractors and sub-contractors have HR policies, procedures and Code of Conduct aligned with Egyptian law and carry out regular monitoring to confirm their implementation. If not available by contractors, ensure Andalusia's Code of Conduct is signed by all contractors and their workforce • Ensure provisions of the Code of Conduct are agreed on by subcontractors and suppliers, and its provisions included as clauses in contracts • Undertake regular random monitoring (at least once a week) of all labourers onsite by means of a labour inspection checklist to ensure compliance with the Code of Conduct and procedures • Review certification documents of subcontractors and suppliers to ensure compliance with regulations • Prepare and implement a stringent selection and evaluation process for the selection and management of contractors and subcontractors with particular focus on environmental, health and safety and labour provisions.					
Residual Impact Post Mitigation						(2) Minor

9.5 Cultural Heritage Impacts during the Construction Phase

While no sites of significant cultural heritage and/or archaeological value have been identified/observed within the Project site boundaries, construction activities such as excavations and ground clearance have the potential to impact unidentified archaeological sites or items of cultural significance by destroying, removing or disturbing them.

Duration	Spatial Extent	Intensity	Probability	Magnitude	Receptor Sensitivity	Impact Significance
(4) Permanent – impacts that will bring about a permanent change	(2) Local – impacts that affect an area in a radius of 20km around the Project	(3) Medium – impact causes natural functions and processes to continue in a modified manner as a result of the altered environment and/or wellbeing of group of people or businesses	(1) Rare (25% chance)	(3) Medium	High	(3) Moderate
Mitigation Measures	• Any chance finds or suspected evidence of archaeological and/or historical materials would be immediately reported by any of the construction workers, or other parties involved in the construction phase and all works should be stopped immediately, until further notice • Chance finds should be immediately reported to the Egyptian Authority of Antiquities					
Residual Impact Post Mitigation						(2) Minor

9.6 Workers Health and Safety Impacts during the Construction Phase

9.6.1 Electrical Hazards

Negative impacts of electrical hazards on workers include shock, electrocution and burns, as well as death in some instances. This may be a result of poorly insulated electrical wires during use of power tools, poor generator connections, electrical circuit wiring between electric boxes and walls during the construction of buildings, replacing electrical connections for renovated buildings and testing the electrical equipment such as the lights, HVAC systems, etc.

Duration	Spatial Extent	Intensity	Probability	Magnitude	Receptor Sensitivity	Impact Significance
(2) Short-term – impacts that are predicted to last only for the duration of the construction phase	(1) On-site – impacts that are limited to the boundaries of the Project.	(4) High – impact alters natural processes and functions causing them to cease either temporarily or permanently	(1) Rare (25% chance)	(2) Low	High	(3) Moderate
Mitigation Measures	• Marking all energized electrical devices and lines with warning signs • Locking out (de-charging and leaving open with a controlled locking device) and tagging-out (warning sign placed on the lock) devices during service or maintenance • Checking all electrical cords, cables and hand power tools for frayed or exposed cords and following manufacturer recommendations for maximum permitted operating voltage of the portable hand tools • Protecting power cords and extension cords against damage from traffic by shielding or suspending above traffic areas • Appropriate labelling of high voltage equipment (‘electrical hazard’) and where entry is controlled or prohibited • Establishing “No Approach” zones around or under high voltage areas • Ensure workforce involved in electrical works are competent and have appropriate supervision					
Residual Impact Post Mitigation						(2) Minor

9.6.2 Machine and Mechanical Hazards

Machine and mechanical hazards from the use of equipment such as bulldozers, tipper trucks, backhoe loaders, cranes and delivery vehicles/trucks may result in accidents causing injury ranging in severity from minor to catastrophic or fatal injuries.

Duration	Spatial Extent	Intensity	Probability	Magnitude	Receptor Sensitivity	Impact Significance
(2) Short-term – impacts that are predicted to last only for the duration of the construction phase	(1) On-site – impacts that are limited to the boundaries of the Project.	(4) High – impact alters natural processes and functions causing them to cease either temporarily or permanently	(2) Possible (50% chance)	(2) Low	High	(3) Moderate
Mitigation Measures	• Implementation of manufacturer's safety devices to protect workers when using machinery • Establishment, maintenance and review of safe working procedures • Conducting risk assessment to ensure safety in the use of machinery by reducing the associated risks • Risk assessment should be completed by employers to ensure that the machinery is safe and to provide a safe system of work • Workers should be consulted to reflect their views and experiences, and should actively participate in the risk assessment procedures • Control of risks through engineering controls, such as where a machine or equipment has an exposed moving part or exposed pinch point that may endanger the safety of any worker, the machine or equipment should be equipped with, and protected by, a guard or other device that prevents access to the moving part or pinch point • Guards should be designed and installed in conformance with appropriate machine safety standards • Apply administrative controls, including appropriate procedures, training and systems of work; and use of PPE					
Residual Impact Post Mitigation						(2) Minor

9.6.3 Hazardous Materials

The improper management of hazardous materials such as paints, fuels, oils, thinners, solvents etc. may be a source of health contamination to construction workers. Workers may be potentially affected with skin, eye, liver and kidney irritations due to inhalation, dermal absorption and accidental ingestion. Improper storage may also result in slips from oil and greasy ground surfaces.

Duration	Spatial Extent	Intensity	Probability	Magnitude	Receptor Sensitivity	Impact Significance
(2) Short-term – impacts that are predicted to last only for the duration of the construction phase	(1) On-site – impacts that are limited to the boundaries of the Project.	(4) High – impact alters natural processes and functions causing them to cease either temporarily or permanently	(2) Possible (50% chance)	(2) Low	High	(3) Moderate
Mitigation Measures	• Ensure all hazardous material storage areas are adequately cordoned off and ample signage displayed • Provide appropriate training to site personnel on the handling and use of hazardous materials • Maintain storage areas to ensure that they are organized, secure, clean and dry • Record all hazardous materials held on site in an inventory with Materials Safety Data Sheets (MSDS) available in the appropriate language • Prepare procedures for handling and treatment in the event of spillage • Provide secondary spill containment for bulk storage and tanks • Provide spill kits and fire extinguishers in areas containing hazardous materials • Wastes, chemicals and fuels shall be stored within impermeable bunds of 110% the volume of the container • Conduct regular inspection of all bulk containment facilities and effluent holding tanks to ensure integrity of storage • Provide PPE that is fit for the task to prevent injury and exposure to hazardous materials • Train staff in the correct selection, use and maintenance of PPE. Inspect PPE regularly and maintain or replace as necessary • Inventory dangerous substances and develop a clear policy and procedure for control and management of risks (accidents, incidents and emergencies) • Classify areas where hazardous explosive atmospheres or chemicals may occur into zones					

	• Convey of information and proper training to employees to control or deal with the risks arising from dangerous substances	
Residual Impact Post Mitigation		(2) Minor

9.6.4 Traffic Management

Poor traffic management in construction sites and defective training of drivers may result in accidents and collisions. Delivery of materials and equipment to the site are likely to cause an impact on the road network, given the already existing traffic congestion in the area. The exact delivery routes, however, are not yet known.

Duration	Spatial Extent	Intensity	Probability	Magnitude	Receptor Sensitivity	Impact Significance
(2) Short-term – impacts that are predicted to last only for the duration of the construction phase	(1) On-site – impacts that are limited to the boundaries of the Project.	(4) High – impact alters natural processes and functions causing them to cease either temporarily or permanently	(2) Possible (50% chance)	(2) Low	High	(3) Moderate
Mitigation Measures	• Training and licensing industrial vehicle operators in the safe operation of specialized vehicles such as backhoe loader, including safe loading/unloading and load limits • Safety belts are to be worn by the driver and all passengers in the vehicle • Ensuring moving equipment with restricted rear visibility is outfitted with audible back-up alarms • Establishing rights-of-way (segregated from pedestrian areas), site speed limits, vehicle inspection requirements, operating rules and procedures (e.g. prohibiting operation of forklifts with forks in down position), and control of traffic patterns or direction • Restricting the circulation of delivery and private vehicles to defined routes and areas, giving preference to 'one-way' circulation, where appropriate • No persons are to be transported on the back of light duty vehicles • The use of cell-phones while driving is prohibited • Traffic rules are to be established and drivers are to be made aware of these rules through training sessions and toolbox talks					
Residual Impact Post Mitigation						(2) Minor

9.6.5 Slips, Trips and Falls

Slips, trips and falls are common hazards on construction sites and may potentially be a source of injuries ranging in severity from minor to fatal injuries. Poor housekeeping and barricading with lack of warning signage together with incompliant use of PPEs increases the risk to workers and visitors in the area. The improper use of ladders and scaffolds by workers during finishing activities may result in minor to severe injuries and even death.

Duration	Spatial Extent	Intensity	Probability	Magnitude	Receptor Sensitivity	Impact Significance
(2) Short-term – impacts that are predicted to last only for the duration of the construction phase	(1) On-site – impacts that are limited to the boundaries of the Project.	(4) High – impact alters natural processes and functions causing them to cease either temporarily or permanently	(2) Possible (50% chance)	(2) Low	High	(3) Moderate
Mitigation Measures	• Assess the causes of slip, trip and fall hazards and address accordingly • Try to place equipment to avoid cables crossing pedestrian routes and use cable guards to cover cables where required • Ensure suitable footwear is worn in areas likely to pose slip, trip or fall hazard • Make sure rugs or mats are securely fixed and that edges do not present a trip hazard • Improve visibility, lighting and hand rails. Add tread markers or other floor markings where visibility is poor • Ensure barricading is in place where it is needed, especially around areas below ground level, and ensure covering all pits and manholes					
Residual Impact Post Mitigation						(2) Minor

9.6.6 Manual Handling

During construction, ergonomic factors such as repetitive motions, poor posture, bending, twisting and faulty lifting of loads are hazards that pose health risks to workers, such as spinal disc problems and musculoskeletal disorders that range in severity from minor medically controlled conditions to disabling injuries.

Duration	Spatial Extent	Intensity	Probability	Magnitude	Receptor Sensitivity	Impact Significance
(2) Short-term – impacts that are predicted to last only for the duration of the construction phase	(1) On-site – impacts that are limited to the boundaries of the Project.	(4) High – impact alters natural processes and functions causing them to cease either temporarily or permanently	(2) Possible (50% chance)	(2) Low	High	(3) Moderate
Mitigation Measures	• Implementation of a safe system of work plans for site-specific tasks, providing information on the use of mechanical aids • Reorganization of a work activity to allow loads to be handled at a safe height or the provision of instruction to workers on how to use handling aids or handle loads safely • Use of mechanical aids for all or part of the activity • Redesign manual processes to avoid lifting/repetitive activities • Install mechanical lifting aids where possible • Reorganization of work area or materials • Where handling will still take place, instruction in safe lift techniques • A job rotation system to be introduced so that workers are not involved in this activity for long periods of time • Assess tasks throughout the process, with particular focus on heavy and repetitive tasks					
Residual Impacts Post Mitigation						(2) Minor

9.6.7 COVID-19

COVID-19 is an infectious disease caused by the most recently discovered coronavirus (SARS-CoV-2) declared a pandemic by the World Health Organization (WHO) in March 2020. The most common symptoms of COVID-19 are fever, dry cough, and tiredness. Other symptoms that are less common and may affect some patients include aches and pains, nasal congestion, sore throat, diarrhea, headache, conjunctivitis, loss of taste or smell or a rash on skin or discoloration of fingers or toes. The virus spreads from person to person primarily through small droplets from the nose or mouth, which are expelled when a person infected coughs, sneezes or speaks, hence why it is important to respect social distancing and follow good respiratory hygiene.

Duration	Spatial Extent	Intensity	Probability	Magnitude	Receptor Sensitivity	Impact Significance
(4) Permanent – impacts that will bring about a permanent change	(4) National – impacts that are experienced on a national level	(4) High – impact alters natural processes and functions causing them to cease either temporarily or permanently	(4) Sure (100% chance)	(4) Major	High	(4) Major
Mitigation Measures	• Wearing a face mask and keeping physical distance with other people of at least 1,5-meter distance. • Avoid shaking hands.					

	• Regularly and thoroughly wash your hands with soap and water or clean your hands with an alcohol-based hand rub as recommended by WHO. • Follow good respiratory hygiene. This means covering your mouth and nose with your bent elbow or tissue when you cough or sneeze. Then dispose the used tissue immediately. • Avoid touching eyes, nose and mouth. Your hands touch many surfaces and can pick up viruses. Once contaminated, hands can transfer the virus to your eyes, nose or mouth. From there, the virus can enter your body and can make you sick. • Clean and disinfect frequently touched objects and surfaces. • Inform you supervisor or manager when you do not feel well, especially if you have a fever, cough and/or difficulty in breathing. • Furthermore, COVID-19 vaccines are also available and provided free of charge by the Ministry of Health.
Residual Impact Post Mitigation	(3) Moderate

9.7 Community Health and Safety Impacts during the Construction Phase

9.7.1 Traffic

The exact transportation routes of materials during the construction phase are not yet known. The transportation of construction materials will increase the number of vehicles using the Sayed Anbar street, the El-Lasilki Road, El Nasr Road, and the Ring Road. However, the impact on the last road is expected to be negligible give that it is major highway designed to absorb high levels of heavy transport. Project traffic is expected to have an impact on the El-Lasilki Road and the El-Nasr Road which already exhibits a high traffic load. The Sayed Anbar street is expected to be the most effected given how narrow it is.

Therefore, an increase in traffic flow will take place at different times during construction contributing to local traffic in Maadi, which may increase the community's exposure to traffic accidents. Transporting workers to and from the site on a daily basis also exposes the community and workers to traffic accidents.

Duration	Spatial Extent	Intensity	Probability	Magnitude	Receptor Sensitivity	Impact Significance
(2) Short-term – impacts that are predicted to last only for the duration of the construction phase	(2) Local – impacts that affect an area in a radius of 20km around the Project.	(3) Medium – impact causes natural functions and processes to continue in a modified manner as a result of the altered environment and/or wellbeing of group of people or businesses	(4) Sure (100% chance)	(3) Medium	High	(3) Moderate
Mitigation Measures	• Ensure all vehicles/trucks follow traffic rules • Transportation of material to the Project site should occur only during daytime working hours • Avoid material delivery during rush hours so as not to increase traffic congestion • Organize workers buses arrival and departure to avoid traffic congestion • Ensure all drivers are properly trained • Develop a Traffic Management Plan for the construction phase					
Residual Impacts Post Mitigation						(2) Minor

9.7.2 Security

The unauthorized access of community members to the Project site during this phase of the Project may expose them to various health and safety hazards, such as trips and falls, vehicle collisions and electrocution. Unauthorized access of community members may also expose the site to the risk of theft and tampering with equipment.

Duration	Spatial Extent	Intensity	Probability	Magnitude	Receptor Sensitivity	Impact Significance

(2) Short-term – impacts that are predicted to last only for the duration of the construction phase	(2) Local – impacts that affect an area in a radius of 20km around the Project.	(3) Medium – impact causes natural functions and processes to continue in a modified manner as a result of the altered environment and/or wellbeing of group of people or businesses	(4) Possible (50% chance)	(3) Medium	High	(3) Moderate
Mitigation Measures	• Erect security fence around the site • Train security to perform regular patrols of the site • Check IDs of all persons before entering the site to ensure they are part of the workforce • Ensure all equipment is securely stored with restricted access					
Residual Impact Post Mitigation						(2) Minor

9.8 Environmental Impacts during the Operation Phase

9.8.1 Air Quality

The operation phase of the Project is not envisaged to release any major air pollution given the lack of onsite pollution sources. The hospital is connected to the national electricity grid eliminating the need for an onsite generator except for a small backup generator for emergencies. Applying proper maintenance of the generator, air pollution is not expected to occur. The main source of pollution for this Project is vehicular emissions and dust emissions due to vehicular movement.

As for indoor air quality, it may be impacted by the use of chemicals, their foul odours, or the preparation of medias, which may have pungent odours. Bad odours are also transmitted by dustbins that are badly handled, are unclean, or were left uncovered. If suitable ventilation systems and sanitation are not implemented and maintained, the indoor air quality may irritate patients, caregivers, and visitors, as well as increase the risk of infection. This may result in exceedances of prescribed Egyptian indoor air quality standards. Such exposure may affect lung and kidney function after long periods of exposure or have immediate effects such as irritation to the eyes, nose, and throat.

Duration	Spatial Extent	Intensity	Probability	Magnitude	Receptor Sensitivity	Impact Significance
(3) Long-term – impacts that will continue for the life of the Project only	(1) On-site – impacts that are limited to the boundaries of the Project.	(3) Medium – impact causes natural functions and processes to continue in a modified manner as a result of the altered environment and/or wellbeing of group of people or businesses	(3) Likely (75% chance)	(3) Medium	High	(3) Moderate
Mitigation Measures	• Develop an Indoor Air Quality Management Plan and a vehicle inspection and maintenance procedure • Strictly follow manufacturer/supplier instructions • Ensure MSDS for all chemicals are available and shared with staff/ workers handling them • Ensure all areas have proper ventilation in place (active or passive) • Limit the exposure time and/or usage time of tools/activities resulting in dust or fumes • Provide respirators for use where harmful dusts or fumes exist • Ensure all machine, equipment and tools are regularly maintained and serviced • Switch off any machine, equipment or tool that is not in use					
Residual Impact Post Mitigation						(2) Minor

9.8.2 Noise

Noise generated during the operation phase will be a result of operating the HVAC system, imaging equipment and other equipment as well as human interactions within the hospital. Repeated and prolonged exposure to noise may result in tinnitus, hearing loss and poor learning environment. However, occupational and ambient noise levels are not expected to exceed neither the Egyptian nor International (IFC; WHO) criteria for occupational health and environmental/disturbance.

Duration	Spatial Extent	Intensity	Probability	Magnitude	Receptor Sensitivity	Impact Significance
(3) Long-term – impacts that will continue for the life of the Project only	(1) On-site – impacts that are limited to the boundaries of the Project.	(3) Medium – impact causes natural functions and processes to continue in a modified manner as a result of the altered environment and/or wellbeing of group of people or businesses	(3) Likely (75% chance)	(3) Medium	High	(3) Moderate
Mitigation Measures	• All areas with high noise emitting activities showed be clearly demarcated with signage • Ear protection should be worn at all times during high noise emitting activities • Apply source control techniques to reduce noise, such as reducing speed of moving parts, reducing friction, • Rotational activities should be performed to reduce staff and patient exposure time to high noise emitting activities • All equipment should be regularly maintained/serviced for better operation • Where applicable, install rubber platforms to reduce noise emissions from vibrations • Select equipment fitted with silencers					
Residual Impact Post Mitigation						(2) Minor

9.8.3 Water

The Project is anticipated to require water for domestic use, cleaning and disinfection in addition to landscape irrigation. The site shall be connected to the municipal water network during the operation phase, which may ultimately result in an increase in water demand and place more pressure on the network. Water consumption during the operation phase is estimated to be 2040 m3 per month. Treated wastewater supplied by the municipality will be used for landscape irrigation and is estimated to require 70 m3/month.

The use of abstraction groundwater wells is not anticipated for the Project sit.

Duration	Spatial Extent	Intensity	Probability	Magnitude	Receptor Sensitivity	Impact Significance

(3) Long-term – impacts that will continue for the life of the Project only	(3) Regional – impacts that are experienced at a regional scale beyond 20 km and determined by administrative boundaries	(2) Low – impact on the environment and/or wellbeing of group of people or businesses occurs but does not affect natural processes and function	(4) Sure (100% chance)	(3) Medium	Medium	(1) Minor
Mitigation Measures	• Launch a resource efficiency campaign across the hospital (signage, seminars, etc.) • Ensure that washing/cleaning activities (e.g. machineries washing, toilets flushing/cleaning, etc.) are carried out through methodologies requiring low water consumption or dry cleaning if possible • Increase "dry landscaping" (xeriscaping) onsite and decrease water intensive turfs • Use drip irrigation techniques • Select vegetation that does not require large quantities of water to grow • Install resource efficient fittings					
Residual Impact Post Mitigation						(1) Insignificant

9.8.4 Waste

During the operational phase of the proposed Project, non-hazardous waste is likely to be generated by the staff and visitors from non-medical activities. Because of the great potential for disease transmission, waste generated by medical activities can be dangerous, poisonous, and even fatal. Hazardous waste generated from hospitals includes sharps (needles, blades, scalpels, etc.) and biomedical (human tissue, contaminated item, etc.), chemicals from laboratories and the hospital pharmacy, and radioactive material. If they are not properly managed and disposed of or allowed to mix with other municipal garbage, they pose a major threat to public health and the environment. The improper waste handling, transportation, and disposal have an impact on the environment. It has the ability to spread infections to the surrounding community. If radioactive waste from medical operations is disposed of improperly, it can cause cancer. The uncontrolled disposal of this waste will have a long-term impact on the environment in terms of radiation as the open disposal of such materials may have an impact on ground water quality and may pollute the soil. Bioaccumulation can increase the radiation impacts, which may increase the risk of tumors and malignancies. Andalusia estimates that 4800 kg of hazardous and 14,400 of non-hazardous waste monthly during operation.

The improper segregation, collection, storage and disposal of non-hazardous and hazardous waste will contribute to the already existing problem of illegal dumping sites in Egypt and increase pressure on existing landfills.

Improper disposal of waste may cause surficial soil contamination if disposed of and left for long periods of time directly on the ground surface.

Duration	Spatial Extent	Intensity	Probability	Magnitude	Receptor Sensitivity	Impact Significance
(3) Long-term – impacts that will continue for the life of the Project only	(1) On-site – impacts that are limited to the boundaries of the Project.	(3) Medium – impact causes natural functions and processes to continue in a modified manner as a result of the altered environment	(3) Likely (75% chance)	(3) Medium	High	(3) Moderate

		and/or wellbeing of group of people or businesses				
Mitigation Measures	**Non-Hazardous Waste** • Develop waste management awareness campaigns across the hospital (signage, seminars, newsletters, etc.) • Distribute colour coded waste receptacles across the hospital and ensure they are labelled with photographic/visual references • Establish a waste storage area onsite where large waste bins for each type of waste are available • Empty waste bins into the main waste dumping area on a daily basis • Train and inform all maintenance workers on waste segregation • Identify recycling companies which can purchase the various types of recyclable waste generated • Different waste bins, for different waste streams must be provided to ensure correct waste separation • Non-recyclable waste must be removed from site on a daily basis and disposed of at a registered or licensed disposal facility by a licensed entity. • Records of appropriate disposal must be furnished to Andalusia on a monthly basis. Under no circumstances are the waste receptacles be left or stored onsite **Hazardous Waste** • Establish a hazardous waste storage area as per Law 4/1994 • Hazardous waste is not to be mixed or combined with general waste earmarked for disposal at a municipal landfill site • Hazardous waste must be disposed of using techniques appropriate to the situation as per the Waste Management Plan. The HSE Manager must identify an approved waste treatment and disposal site. • Hazardous waste bins must be clearly marked and stored in a contained area (or located on an impermeable surface) and covered with a lid • All hazardous waste must be removed from site on a monthly basis and disposed of at a registered or licensed hazardous disposal facility. Records of appropriate hazardous waste disposal certificates must be furnished to Andalusia when hazardous waste is removed for offsite disposal					
Residual Impact Post Mitigation						(2) Minor

9.8.5 Wastewater

During the operational phase of the proposed Project, municipal wastewater is anticipated to be generated by the Project from sources like laboratories, operation room, emergency room, the morgue, bathrooms, kitchen, and the x-ray department. The site shall be connected to the existing municipal sewer network so it is probable that chemicals and other hazardous substances will be poured down the drains. This will result in alterations in the wastewater effluent quality being discharged into the municipal sewer network, thereby potentially violating the prescribed Egyptian wastewater standards. Wastewater discharge is not likely to have an impact on soil or groundwater, especially given the depth of groundwater in the site, unless drains are clogged in which case wastewater will back up out of manholes located both onsite and offsite. This may potentially expose patients, staff, workers and community members to strong odours, biological pathogens and limited mobility.

Duration	Spatial Extent	Intensity	Probability	Magnitude	Receptor Sensitivity	Impact Significance
(3) Long-term – impacts that will continue for the life of the Project only	(1) On-site – impacts that are limited to the boundaries of the Project.	(3) Medium – impact causes natural functions and processes to continue in a modified manner as a result of the altered environment and/or wellbeing of group of people or businesses	(3) Likely (75% chance)	(3) Medium	High	(3) Moderate

Mitigation Measures	• Clearly display wastewater handling rules, including liquid waste disposal • Distribute colour coded liquid waste receptacles inside all contaminated wastewater generation areas and ensure they are labelled with photographic/visual references • Ensure all liquid waste is collected on a daily basis and stored in the designated hazardous waste storage area • Records of appropriate disposal must be furnished to Andalusia on a monthly basis • Regularly inspect the wastewater infrastructure (drains, pipelines, manholes, etc.)	
Residual Impact Post Mitigation		(2) Minor

9.8.6 Energy Consumption

Energy consumption during the operation phase will be attributed to the provision of lighting, cooling, as well as the operation of equipment/machine in the various departments. This will ultimately result in the release of indirect greenhouse gas emissions (GHG) primarily through the use of fossil fuels to generate power at the power plant to operate the hospital.

Duration	Spatial Extent	Intensity	Probability	Magnitude	Receptor Sensitivity	Impact Significance
(3) Long-term – impacts that will continue for the life of the Project only	(3) Regional – impacts that are experienced at a regional scale beyond 20 km and determined by administrative boundaries	(3) Medium – impact causes natural functions and processes to continue in a modified manner as a result of the altered environment and/or wellbeing of group of people or businesses	(3) Sure (100% chance)	(3) Medium	High	(4) Major
Mitigation Measures	• Consider passive designs for cooling, heating and lighting in all buildings • Install energy efficient lighting • Consider designing natural ventilation systems • Install motion sensors for lighting • Ensure buildings are well insulated to avoid the escape of hot and/or cool air depending on season • Ensure all equipment and machines are only used whenever required • Install dimmers wherever possible • Unplug high energy demanding equipment when not in use • Switch off computers, printers and all other appliances at the end of day • Use timers for air conditioning and ventilation systems • Install energy meters to monitor consumption					
Residual Impact Post Mitigation						(2) Moderate

9.9 Socio-Economic Impacts during the Operation Phase

Potential Positive Socio-Economic Impacts

Positive impacts primarily target the economy and the health of the people, whereby the project will provide job opportunities for different labour classes throughout its life. The establishment of a first-class hospital in the area will ensure proper care is provided for people and improve the overall health of the community. Other benefits include job creation, boosting of local economic / trading activities, improved livelihoods of local artisans and revenue generation for the various governorates.

Potential Negative Socio-Economic Impacts

9.9.1 Labour Conditions and Community Wellbeing

Improper management of human resources and working conditions could lead to violations to the national regulations and AfDB Oss especially those on working conditions and terms of employment. Policies on workers' rights related to hours of work, wages, overtime, compensation, and benefits must be developed in line with applicable standards to avoid worker exploitation and exposure to unfair conditions.

A lack of engagement with the surrounding community may create a sense of resentment towards the Project, especially in the face of the potential risk to their well-being as a result of the presence of infection hazards around the residents. This could lead to potential conflicts between residents and Project staff.

Duration	Spatial Extent	Intensity	Probability	Magnitude	Receptor Sensitivity	Impact Significance
(3) Long-term – impacts that will continue for the life of the Project only	(2) Local – impacts that affect an area in a radius of 20km around the Project.	(3) Medium – impact causes natural functions and processes to continue in a modified manner as a result of the altered environment and/or wellbeing of group of people or businesses	(4) Sure (100% chance)	(3) Medium	High	(3) Moderate
Mitigation Measures	• Create welfare facilities (i.e. sitting areas, recreational areas, etc.) for staff, patients and visitors • Introduce behavioural and communication training programs • Launch awareness campaigns on the code of conduct/ HR policy developed for the Project • Develop a workers grievance mechanism allowing workers to communicate their complaints without fear of retribution • Prepare a stakeholder engagement plan (SEP) identifying the primary stakeholders, the information to be shared with them and the appropriate communication channels • Develop a community grievance mechanism which will allow community members to come forward with their complaints and grievances, and allowing their grievances to be addressed in a timely manner					
Residual Impact Post Mitigation						(2) Minor

9.9.2 Gender Based Violence and Discrimination

Andalusia already have their stringent Code of Conduct in both Arabic and English that has clauses on child, forced labour, gender-based violence, sexual harassment, exploitation and abuse. However, the operation of the Project may give rise to increased incidents of gender-based violence and harassment. This may come in the form of sexual harassment, stalking, bullying, verbal insult, coercion, attempted rape and in some instances rape. Indirect gender-based violence may be a product of the norms and beliefs which may be bred by the workers, patients and visitors, such as the notions that "violence can only be fought with violence", "violence is a means to achieve certain desires" and "females are helpless". Incidents of discrimination based on gender, physical ability and social status may take place in the hospital. Both gender-based violence and discrimination may cause a victim to suffer psychological, emotional and/or physical consequences, any of which can significantly contribute to an unhealthy working environment for the staff and even legal liabilities and reputational risks for the hospital and the Group.

Duration	Spatial Extent	Intensity	Probability	Magnitude	Receptor Sensitivity	Impact Significance

(3) Long-term – impacts that will continue for the life of the Project only	(2) Local – impacts that affect an area in a radius of 20km around the Project.	(3) Medium – impact causes natural functions and processes to continue in a modified manner as a result of the altered environment and/or wellbeing of group of people or businesses	(4) Sure (100% chance)	(3) Medium	High	(3) Moderate
Mitigation Measures	• Develop and distribute a policy on gender-based violence and discrimination • Develop punitive measures to address cases of gender-based violence and discrimination • Offer counselling services to victims of gender-based violence and discrimination • Increase awareness of the problem and its impact • Establish a grievance mechanism with specific measures to accommodate complaints on gender-based violence and harassment • Introduce prevention programs as part of curricula focusing on conflict resolution, teamwork, problem solving					
Residual Impact Post Mitigation						(2) Minor

9.10 Cultural Heritage Impacts during the Operation Phase

No negative impacts on cultural heritage are anticipated during the operation phase of the Project.

9.11 Health and Safety Impacts during the Operation Phase

9.11.1 Injuries, Infection and Diseases

Improper handling of equipment and chemicals may result in occupational diseases and injuries therefore it is imperative that appropriate awareness and training are given. When mercury-containing equipment break, for example, health workers, patients, and visitors are exposed to a mercury hazard. X-ray facilities also pose a radiation risk and especially for pregnant females. Emergencies such as fires or injuries must be managed properly according to a well-established procedure. Individuals who are exposed to hazardous health-care waste, including those who work in health-care facilities (medical physicians, nurses, health-care auxiliaries, and hospital maintenance employees, etc.) and those exposed to this waste outside the facility such as waste disposal workers and even scavengers are the main groups at risk.

Duration	Spatial Extent	Intensity	Probability	Magnitude	Receptor Sensitivity	Impact Significance
(3) Long-term – impacts that will continue for the life of the Project only	(1) On-site – impacts that are limited to the boundaries of the Project.	(4) High – impact alters natural processes and functions causing them to cease either temporarily or permanently	(3) Likely (75% chance)	(3) Medium	High	(3) Moderate
Mitigation Measures	• Develop an infection control procedure for the Project defining responsibilities, resources and management/ mitigation measure for potential infection risks within the Project • Ensure only experienced and qualified staff are supervising the use of all equipment and machines • Ensure there is restricted access to the high-risk areas such as imaging devices • No worker is allowed to operate any equipment and/or machine without the appropriate training/induction and written permission to proceed by the technician in charge • Regularly maintain and service equipment and machines • Risk assessments and control measures should be completed as part of the Project involving injury or infection risks					

	• All areas and surfaces are to be cleaned and sanitized frequently according to a pre-established schedule • Only referred patients will be allowed to enter X-Ray room • X-ray department to distribute PPE for operators and patients • Radioactive and Infection safety awareness campaigns (training, signage) to be prepared • The same mitigation measures for waste handling during the operation phase
Residual Impact Post Mitigation	(2) Minor

9.11.2 Electrical Hazards

Negative impacts of electrical hazards on patients and staff during the operation phase of the Project include electrocution, shock and burns, as well as death in some instances. This may be a result of inexperienced technicians attempting to energize the various equipment and machines used in the hospital; during the commissioning and testing of electrical experiments and installations; exposed, poorly insulated and/or worn out electrical wires and plugs of machines and equipment; and defective equipment. Additionally, any liquids near electrical equipment poses a risk of electrocution.

Duration	Spatial Extent	Intensity	Probability	Magnitude	Receptor Sensitivity	Impact Significance
(3) Long-term – impacts that will continue for the life of the Project only	(1) On-site – impacts that are limited to the boundaries of the Project.	(4) High – impact alters natural processes and functions causing them to cease either temporarily or permanently	(3) Likely (75% chance)	(3) Medium	High	(3) Moderate
Mitigation Measures	• Ensure only experienced and qualified technicians are supervising the use of all equipment and machines • Ensure there is restricted access to the electrical boards • No worker is allowed to operate any equipment and/or machine without the appropriate training/induction and written permission to proceed by the technician in charge • No liquids are to be stored and/or handled near electrical equipment • Install ground-fault circuit interrupters • Regularly maintain and service equipment and machines • Risk assessments and control measures should be completed as part of the Project involving electrical works and safe systems of work certificates issued for all equipment and machines • Working on electrical equipment alone is prohibited – there must be at least one other individual in proximity • Prepare and display clear instructions on how electrical hazards and how to deal with someone who has come in contact with an electrical source • Mitigation measures applied for the construction phase					
Residual Impact Post Mitigation						(2) Minor

9.11.3 Hazardous Materials

The improper management of hazardous materials such as acids, bases, biological agents, paints, fuels, oils, colorants, cleaning agents, solvents, hazardous waste (including sharps, biomedical and radioactive waste), etc. may be a source of health contamination to patients, visitors and staff. Those coming in contact with hazardous materials may potentially be affected with skin, eye, liver and kidney irritations due to inhalation, dermal absorption and accidental ingestion. The use of compressed gas can also expose patients, visitors and staff to toxic gases, fires and even explosions.

Duration	Spatial Extent	Intensity	Probability	Magnitude	Receptor Sensitivity	Impact Significance
(3) Long-term – impacts that will continue for the life of	(1) On-site – impacts that are limited to the	(4) High – impact alters natural processes and functions causing	(3) Likely (75% chance)	(3) Medium	High	(3) Moderate

the Project only	boundaries of the Project.	them to cease either temporarily or permanently				
Mitigation Measures	• Develop a hazardous materials management procedure. • Develop a release form for liquid/ solid hazardous materials to track quantities used and ensure proper/safe disposal • Maintain MSDS for all hazardous materials • Establish restricted access areas for liquid/solid hazardous materials/substances • Avoid overusing hazardous materials/substances • Ensure all hazardous material handlers/users are wearing appropriate PPE • Prepare and display procedures on how to handle a chemical spill • Provide spill kits, first-aid kits and fire extinguishers to handle any spill • Ensure all gas cylinders are properly secured in a well ventilated and protected area away from heat and the sun • Ensure all gas cylinders(full or empty) are supported and in an upright position at all times • Mitigation measures applied for the construction phase					
Residual Impact Post Mitigation						(2) Minor

9.11.4 COVID-19

COVID-19 is an infectious disease caused by the most recently discovered coronavirus (SARS-CoV-2) declared a pandemic by the World Health Organization (WHO) in March 2020. The most common symptoms of COVID-19 are fever, dry cough, and tiredness. Other symptoms that are less common and may affect some patients include aches and pains, nasal congestion, sore throat, diarrhea, headache, conjunctivitis, loss of taste or smell or a rash on skin or discoloration of fingers or toes. The virus spreads from person to person primarily through small droplets from the nose or mouth, which are expelled when a person infected coughs, sneezes or speaks, hence why it is important to respect social distancing and follow good respiratory hygiene.

Duration	Spatial Extent	Intensity	Probability	Magnitude	Receptor Sensitivity	Impact Significance
(4) Permanent – impacts that will bring about a permanent change	(4) National – impacts that are experienced on a national level	(4) High – impact alters natural processes and functions causing them to cease either temporarily or permanently	(4) Sure (100% chance)	(4) Major	High	(4) Major
Mitigation Measures	• Wearing a face mask and keeping physical distance with other people of at least 1,5-meter distance. • Avoid shaking hands. • Regularly and thoroughly wash your hands with soap and water or clean your hands with an alcohol-based hand rub as recommended by WHO. • Follow good respiratory hygiene. This means covering your mouth and nose with your bent elbow or tissue when you cough or sneeze. Then dispose the used tissue immediately. • Avoid touching eyes, nose and mouth. Your hands touch many surfaces and can pick up viruses. Once contaminated, hands can transfer the virus to your eyes, nose or mouth. From there, the virus can enter your body and can make you sick. • Clean and disinfect frequently touched objects and surfaces. • Inform you supervisor or manager when you do not feel well, especially if you have a fever, cough and/or difficulty in breathing. • Furthermore, COVID-19 vaccines are also available and provided free of charge by the Ministry of Health.					
Residual Impact Post Mitigation						(3) Moderate

9.12 Community Health and Safety Impacts during the Operation Phase

9.12.1 Traffic

Traffic is expected to increase in the Project area and especially along the the Sayed Anbar street and the El-Lasilki Road. Based on observations made during site visits, the Lasilki street will likely support this traffic increase without significantly contributing to congestion and/or disturbance to the surrounding communities compared to the baseline scenario. However, the Sayed Anbar street needs to be carefully management to avoid negative impacts on the residents. The Project design takes into consideration that patients and doctors are expected to reach the hospital using private vehicles and have thus increased the required parking spaces in the allocated hospital parking area.

An assessment of traffic impacts can be further assessed in the event that Andalusia will introduce buses to transport staff and workers.

9.12.2 Security

The unauthorized access of community members to the Project site during this phase of the Project may expose them to various health and safety hazards cuts and burns from equipment and machines, and an increased risk of infection. Unauthorized access of community members may also disturb the staff and patients, and expose the site to the risk of theft and tampering with equipment.

Duration	Spatial Extent	Intensity	Probability	Magnitude	Receptor Sensitivity	Impact Significance
(2) Short-term – impacts that are predicted to last only for the duration of the construction phase	(2) Local – impacts that affect an area in a radius of 20km around the Project.	(3) Medium – impact causes natural functions and processes to continue in a modified manner as a result of the altered environment and/or wellbeing of group of people or businesses	(4) Possible (50% chance)	(3) Medium	High	(3) Moderate
Mitigation Measures	• Train security to perform regular patrols of the site • Check IDs of all persons before entering the site to ensure they are either patients, staff or workers • Maintain visitor logs at all entrances and exits • Ensure all equipment is securely stored with restricted access • Develop a Traffic Management Plan for the operation phase					
Residual Impact Post Mitigation						(2) Minor

9.13 Impacts during the Decommissioning Phase

Impacts for the decommissioning phase cannot be determined at this stage of the Project given the undefined timeline of the Project. A separate ESIA will be prepared for the decommissioning phase.

9.14 Cumulative Impacts

Cumulative impacts are defined as impacts that act simultaneously, including those arising from existing or foreseeable third-party activities, and have an effect on the same valued ecosystem receptor as the proposed Project. Therefore, cumulative impacts are those which act in a way that the sum is larger than that of any individual impact on its own. This section of the ESIA considers the cumulative impacts that would result from the combination of the Project and other existing or foreseeable developments in the broader Project area.

Based on the significance of the residual impacts during construction and operation the following impacts have been considered in this assessment:

- Ambient Air
- Noise
- Energy, Water and Wastewater

- Waste
- Traffic
- Gender Based Violence, Illicit Behaviour and Crime

Cumulative impact significance is based on expert judgement, taking into consideration that cumulative effects are difficult to predict as they are the result of complex interactions between multiple projects or activities. In this case, many of the foreseeable projects are not definitely known. It is also important to note that the mitigation and management measures of cumulative impacts are beyond the ability of Andalusia, and therefore the mitigation measures included in Section 10 of this ESIA have focused on the measures that Andalusia can take to avoid or control impacts from its Project. Lastly, health and safety cumulative impacts have been excluded as these will be managed individually by the Project.

9.14.1 Existing and/or Foreseeable Developments

Based on visual observations and a review of available documentation for the Project, commercial and residential buildings were present in the area surrounding the project in addition to the Maadi Technological Park.

9.14.2 Ambient Air Cumulative Impacts

During Construction

The construction of the Project in combination with neighbouring developments, both existing and foreseeable, will result in increased dust and gaseous emissions in the Project areas. Emissions will be the result of earth works and vehicular movement on unpaved surfaces, mainly. This cumulative impact is anticipated to be temporary in nature and localized. This impact is predicted to be minor.

During Operation

No negative cumulative impacts during the operation phase of the Project are anticipated given the nature of the Project and surrounding developments (existing and foreseeable) which do not constitute air emissions. This impact is predicted to be insignificant.

9.14.3 Noise Cumulative Impacts

During Construction

The construction of the Project, in addition to noise generated by the development of foreseeable projects is likely to cause an increase in noise emissions in project areas. Noise emissions will be the result of the use of heavy equipment and machinery on construction sites. However, noise generated by the Project and that of foreseeable Projects is anticipated to be temporary in nature and localized. This impact is predicted to be minor.

During Operation

Noise emissions during operations are anticipated to be limited to the boundaries of the site given they are predominantly a result of human interaction, medical equipment and ventilation systems as opposed to the operation of high noise emitting equipment/machines. Equipment/machine use onsite will be limited to emergencies and future maintenance (not yet planned), therefore limiting the extent of noise emissions beyond the site boundaries. This impact is predicted to be insignificant.

9.14.4 Waste Cumulative Impacts

During Construction

Waste generated by the Project in addition to waste anticipated to generated from foreseeable developments and those existing is likely to have an impact on the municipal waste management systems, whereby the amount of waste landfilled is likely to increase. This impact is predicted to be minor.

During Operation

The cumulative impact of waste during the operation is similar to that of the construction phase, except waste quantities are likely to increase given the presence of more people within the facilities such as patients and their families. Additionally, an increase in the generation of hazardous waste from the area is expected for the Project which adds pressure on treatment facilities such as incinerators. This impact is predicted to be moderate.

9.14.5 Energy, Water and Wastewater Cumulative Impacts

During Construction

The construction phase of the Project is not anticipated to apply significant pressure on municipal services given that the number of workers on each site is considerably low in comparison to the demand of other projects. Energy consumption will also be primarily attributed to the use of fossil fuels for the operation of heavy equipment and generators onsite, while low voltage energy usage will be used for power tools. Energy consumption during this phase is temporary. This impact is predicted to be minor.

During Operation

Existing and foreseeable developments, in addition to the Project are likely to increase the demand for the delivery of municipal services, such as the provision of energy, potable water and sewerage. However, it has been observed that the infrastructure in all project areas is well established and fully functional. With regards to energy consumption and its result in GHG emissions, every source of GHG emissions is a source of cumulative impact and ultimately a contributor to the same impact. The mitigation measures, if properly implemented, will contribute to reducing the Project's GHG emissions. This impact is predicted to be moderate.

9.14.6 COVID-19 Cumulative Impacts

Outbreak of the COVID-19 can impact people on the local and national levels. Workers can catch and carry the virus and then transit it to each other onsite. Then, they leave and interact with others offsite spreading the virus. The impact is predicted to be moderate.

9.14.7 Traffic Cumulative Impacts

Traffic in project areas is likely to increase during the operation of the Project, and is anticipated to face further increases as neighboring developments are completed. The road and transportation infrastructure in the project areas was observed to be adequate enough to absorb increased traffic in Project areas. This is also an aspect highly likely to be accounted for by urban development authorities. This impact is predicted to be minor.

9.14.8 Gender Based Violence, Illicit Behaviour and Crime Cumulative Impacts

During Construction

Gender based violence, illicit behavior and crime during the construction phase of the Project may be a result of multiple workforces present in residential areas, which may cause conflict with residents found in the Project areas. Furthermore, the presence of workers during the construction phase exposes the community to a potential increase in criminal activity given that some of the Project surrounding areas are empty plots that are not fully developed, therefore offering a quiet and easily accessible environment. This impact is predicted to be moderate.

During Operation

The operation of the Project in combination with already existing institutions is not expected to cause a notable increase in gender-based violence, illicit behaviour or crime. This would be a result of implementing the Project's code of conduct and the fact that employees will be engaged for the operation phase on a full-time basis compared to the temporary employment of construction workers. Full-time employees are less likely to engage in illicit or violent behaviour out of fear of losing their jobs. This impact is predicted to be minor.

9.14.9 Economic Stimulus

During Construction and Operation

The construction and operation of the Project, existing developments and foreseeable developments will encourage the development of economic activities and the creation of job opportunities in the Project areas, therefore, stimulating the local economies. This impact is predicted to be positive.

The tables below summarize the cumulative impacts during the construction phase and the operation phase.

Table 9-2 Summary of Cumulative Impacts during the Construction Phase

Aspect to be Impacted	Description of Impact	Impact Significance
Ambient Air	The construction of the Project in combination with neighbouring developments, both existing and foreseeable, will result in increased dust and gaseous emissions in the Project areas. Emissions will be the result of earth works and vehicular movement on unpaved surfaces, mainly. This cumulative impact is anticipated to be temporary in nature and localized.	Minor
Noise	The construction of the Project, in addition to noise generated by the development of foreseeable projects is likely to cause an increase in noise emissions in project areas. Noise emissions will be the result of the use of heavy equipment and machinery on construction sites. However, noise generated by the Project and that of foreseeable Projects is anticipated to be temporary in nature and localized.	Minor
Waste	Waste generated by the Project in addition to waste anticipated to generated from foreseeable developments and those existing is likely to have an impact on the municipal waste management systems, whereby the amount of waste landfilled is likely to increase.	Minor
Energy, Water and Wastewater	The construction phase of the Project is not anticipated to apply significant pressure on municipal services given that the number of workers on each site is considerably low in comparison to the demand of other projects. Energy consumption will also be primarily attributed to the use of fossil fuels for the operation of heavy equipment and generators onsite, while low voltage energy usage will be used for power tools. Energy consumption during this phase is temporary.	Minor
Traffic	Traffic in project areas is likely to increase during the operation of the Project, and is anticipated to face further increases as neighboring developments are completed.	Minor

	The road and transportation infrastructure in the project areas was observed to be adequate enough to absorb increased traffic in Project areas. This is also an aspect highly likely to be accounted for by urban development authorities	
Gender-based Violence, Illicit Behaviour and Crime	Gender based violence, illicit behavior and crime during the construction phase of the Project may be a result of multiple workforces present in residential areas, which may cause conflict with residents found in the Project areas. Furthermore, the presence of workers during the construction phase exposes the community to a potential increase in criminal activity given that some of the Project surrounding areas are empty plots that are not fully developed, therefore offering a quiet and easily accessible environment	Moderate
Economic Stimulus	Existing developments and foreseeable developments will encourage the development of economic activities and the creation of job opportunities in the Project areas, therefore, stimulating the local economies.	Positive

Table 9-3 Summary of Cumulative Impacts during the Operation Phase

Aspect to be Impacted	Description of Impact	Impact Significance
Ambient Air	No negative cumulative impacts during the operation phase of the Project are anticipated given the nature of the Project and surrounding developments (existing and foreseeable) which do not constitute air emissions.	Insignificant
Noise	Noise emissions during operations are anticipated to be limited to the boundaries of the site given they are predominantly a result of human interaction, medical equipment and ventilation systems as opposed to the operation of high noise emitting equipment/machines. Equipment/machine use onsite will be limited to emergencies and future maintenance (not yet planned), therefore limiting the extent of noise emissions beyond the site boundaries.	Insignificant
Waste	The cumulative impact of waste during the operation is similar to that of the construction phase, except waste.	Moderate
Energy, Water and Wastewater	Existing and foreseeable developments, in addition to the Project are likely to increase the demand for the delivery of municipal	Moderate

	services, such as the provision of energy, potable water and sewerage. However, it has been observed that the infrastructure in all project areas is well established and fully functional. With regards to energy consumption and its result in GHG emissions, every source of GHG emissions is a source of cumulative impact and ultimately a contributor to the same impact. The mitigation measures, if properly implemented, will contribute to reducing the Project's GHG emissions	
Traffic	Traffic in project areas is likely to increase during the operation of the Project, and is anticipated to face further increases as neighboring developments are completed. The road and transportation infrastructure in the project areas was observed to be adequate enough to absorb increased traffic in Project areas. This is also an aspect highly likely to be accounted for by urban development authorities	Minor
Gender-based Violence, Illicit Behaviour and Crime	The operation of the Project in combination with already existing institutions is not expected to cause a notable increase in gender-based violence, illicit behaviour or crime. This would be a result of implementing the Project's code of conduct and the fact that employees will be engaged for the operation phase on a full-time basis compared to the temporary employment of construction workers. Full-time employees are less likely to engage in illicit or violent behaviour out of fear of losing their jobs.	Minor
Economic Stimulus	Existing developments and foreseeable developments will encourage the development of economic activities and the creation of job opportunities in the Project areas, therefore, stimulating the local economies.	Positive

10 ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

An Environmental and Social Management Plan (ESMP) is prepared to be an integral part of the ESIA with a purpose of defining the management framework for the Project, institutional strengthening measures, mitigation and monitoring measures (including a timeframe and responsibilities), as well as training and budgetary considerations.

The ESMP is designed to address all phases of the Project and meet the requirements of AfDB's OS 1 and Egyptian environmental and social laws and regulations. The ESMP is applicable to all Project personnel and contractor/subcontractor personnel, as well as visitors to the Project site.

The ESMP is based on the assessment of impacts identified in 9 of the ESIA and its implementation will be the responsibility of Andalusia Group. The ESMP has been prepared in accordance with the structure proposed below, in accordance with AfDB OS 1.

Table 10-1: ESMP Structure

Section	Description
General information	The project implementation start date, project completion date, date of operation, period covered
Objectives	Present the objectives of the ESMP, such as outlining the mitigating/enhancing, monitoring and institutional-strengthening measures required to prevent, minimise, mitigate or compensate for adverse environmental and social impacts or enhance benefits and to formulate capacity-building measures to strengthen Andalusia's capacities if necessary.
Context	Brief description of project activities and major environmental and social components likely to be positively or negatively affected by the project.
Responsibilities and institutional arrangements	Identify the responsibilities of Andalusia and its contractors in implementing the ESMP.
Positive and negative environmental and social impacts and mitigation measures	A table showing the positive and negative environmental and social impacts associated with the Project, including timeframe, mitigation measures and associated cost estimates.
Environmental and social management plans	A list of management plans to be prepared for the Project and their associated cost estimates.
Environmental and social monitoring plan	A description of the monitoring requirements for the different phases of the Project, including parameters to be monitored, frequency, KPI and responsibility.
Training	A description of training requirements for implementing the ESMP, including topics, number of sessions and associated cost estimates.
Cost estimates	A table outlining the costs of institutional arrangements, mitigation, monitoring and training.

10.1 General Information

The Project is anticipated to begin the construction phase in mid-2022. The construction phase anticipated to last for a duration of 2.5 years, so that operation will begin in 2025 and will have an approximate duration of 30 years.

10.2 Objectives of the Environmental and Social Management Plan (ESMP)

The ESMP contains mitigating/enhancing, monitoring and institutional-strengthening measures required to prevent, minimise, mitigate or compensate for adverse environmental and social impacts or enhance benefits and to formulate capacity-building measures to strengthen the Group's capacities if necessary. The ESMP will be binding to the contractor, sub-contractors, suppliers and employees working for, or on behalf of, Andalusia Group. It is essential that this portion be effectively communicated to all site personnel. Compliance is mandatory for all site personnel and all activities undertaken on-site.

10.3 Context

The Project comprises of the construction of the Andalusia New Maadi Hospital as an expansion of the existing Maadi Hospital. The hospital shall comprise of 2 basement floors, a ground floor and 7 top floors with a total floor area of 4,165 m2. Additionally, the hospital will include designated departments and facilities for physiotherapy, chemotherapy, radiotherapy, imaging, endoscopy, surgery, maternity, and a cardiac centre. This project is expected to deliver world class health care to the area improving accessibility to treatment and improving the overall health of the community.
The construction of the hospital is expected to begin in mid-2022 and last for a duration of two and a half years, where operations are expected in early 2025.

No major impacts were identified in the assessment, and overall, the development of the Project is expected to deliver world class health care to the area improving accessibility to treatment and improving the overall health of the community, provide employment opportunities and promote economic growth without resulting in any significantly adverse impacts which cannot be practically and effectively mitigated. Other benefits of the Project include improved livelihoods of local artisans and revenue generation for the governorate.

Conversely, some of the negative impacts likely to result from the Project during the construction phase include:

- Increase in emissions that may adversely affect ambient air quality as a result of construction activities;
- Increase in noise emissions that may affect neighbouring communities during construction activities;
- Increased generation of waste, including hazardous waste material, potentially contaminating soil and misplacing hazardous waste in municipal landfills;
- Increase in daytime noise levels during construction activities; and
- Injuries to workers and community members due to mechanical and/or electrical hazards.

Negative impacts during the operation of the Project include:

- Increased consumption of water for domestic and irrigation purposes (i.e. landscaping);
- Increased generation of wastewater;
- Increased generation of waste and its improper storage and disposal, which may affect landfilling capacities and cause contamination;
- Generation of medical waste requiring special treatment and increased potential for the spread of disease to the surrounding community if improper waste management and infection control are applied;
- Potential discharge of hazardous liquids from laboratories into the municipal sewer network.

10.4 Responsibilities and Institutional Arrangement

Based on the organizational chart for Andalusia Group presented in Figure 10-1 below, there is a Department for Environment, Health and Safety. It is envisioned that this department will be responsible for the implementation of the ESMP. The Department may delegate the EPC subcontractor with the implementation of the ESMP, however, Andalusia remain liable for any impacts resulting due to project activities. Managing contractors and their subcontractors during the construction phase will be the responsibility of Andalusia. Andalusia will ensure its mitigation and monitoring measures for this phase are acknowledged, adopted and implemented by the contractors and subcontractors. This can be achieved by including environmental and social in contractual clauses with EPC contractors.

Andalusia will establish and maintain an organizational structure with the required competencies to implement the ESMP, and one which also provides clear lines of authority for the ESMP's implementation. Andalusia also is expected to create a budget to strengthen is capabilities in implementing the ESMP. An organization chart specific to the Project should be developed to outline the roles and responsibilities of Andalusia personnel, as well as the roles and responsibilities of contractors and subcontractors for the implementation of the ESMP. Figure 10-1 presents institutional responsibilities for the Project.

Figure 10-1: Andalusia Group Organization Chart

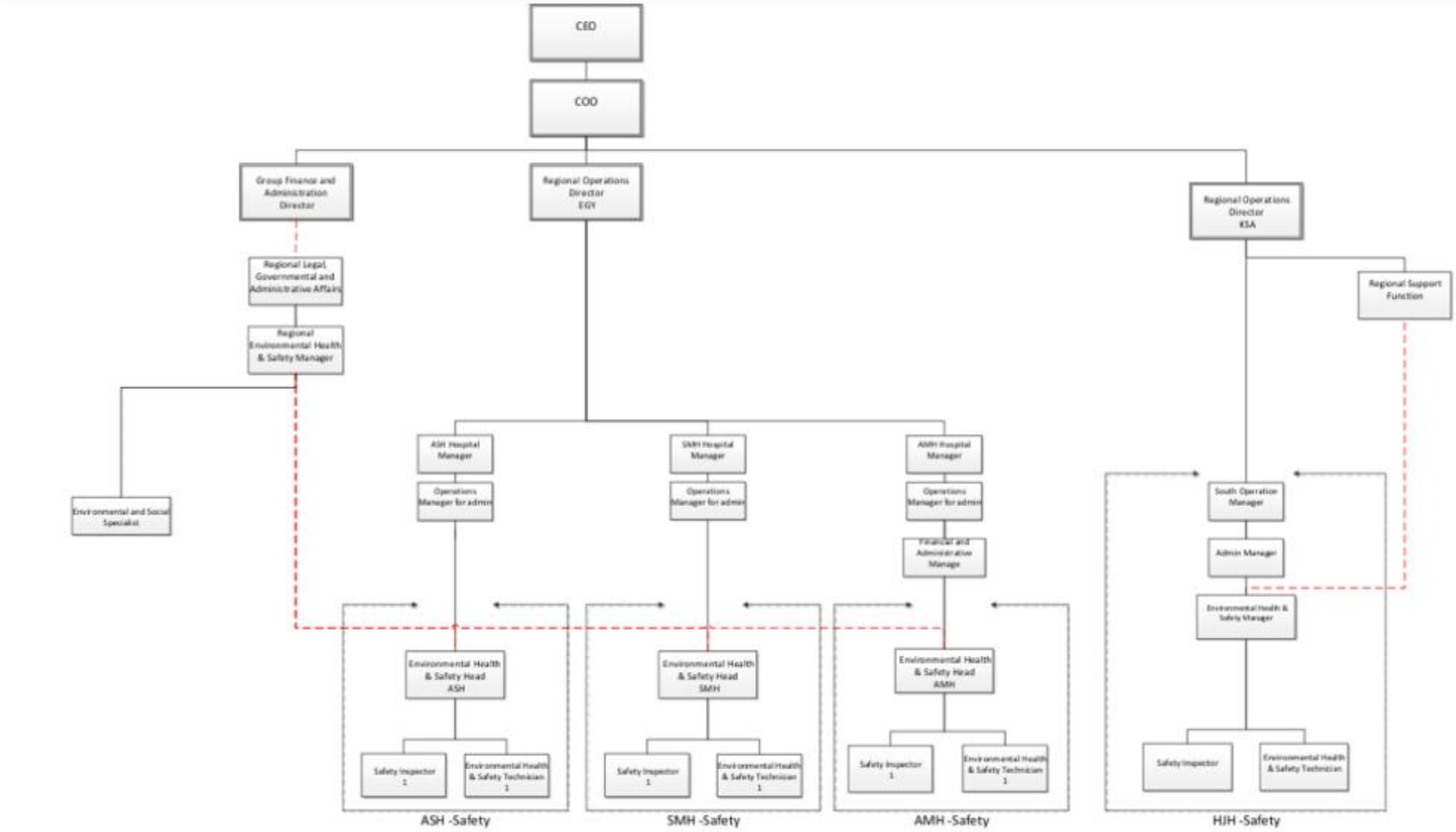


Table 10-2 below presents the high-level responsibilities of Andalusia Group, contractors and subcontractors.

Table 10-2: Institutional Responsibilities

Organization	Responsibilities
Andalusia Group	Approve ESMP Hire a team of qualified HSE and administrative staff to manage the construction and operation phases of the Project (as presented in Table 10-2 below) Set the desired environmental and social goals and targets Ensure all resources are made available for the implementation of the ESMP Ensure all parties are aware of and adhere to Andalusia's ESMP Oversee the implementation of the ESMP by all parties Review and audit the contractor's and subcontractor's performance (on a monthly basis) by regularly reviewing KPIs and objectives Report Project's progress to AfDB Ensure all provisions of the ESMP are integrated into contractor and subcontractor environmental, social, health and safety management systems Ensure all provisions of the ESMP are integrated into hospital procedures and manuals Ensure the Project's performance by all contractors and subcontractors is in line with national environmental and social laws and regulations, the ESMP and AfDB's Oss
Contractors and Subcontractors	Implement the CESMP and update whenever necessary Prepare and update all required environmental and social sub management plans in accordance with the ESMP (as per Table 10-8). Formally adopting (via optional contractual clauses) the Project's environmental and social management plans is also acceptable. Ensure project compliance with applicable national laws and regulations, the ESMP and AfDB OSs Periodically conduct audits and assessments of environmental, social, health and safety management measures and procedures Develop procedures and organize/provide training to HSE Technicians Ensure that subcontractors have developed their own environmental and social site-specific plans and procedures or have adopted and are complying with the ESMP Ensure that all plans are communicated to all workers via formal training and toolbox talks Ensure effective coordination and cooperation between the subcontractors to ensure the implementation of the ESMP and all management systems onsite Monitoring environmental, social, health and safety performance and applying adequate actions to avoid or minimize the risks if necessary In instances of non-compliance, ensure appropriate corrective and preventative actions are immediately defined and implemented Ensure that adequately trained persons, properly functioning equipment and site-specific procedures are in place to respond to any emergencies Prepare weekly and monthly HSE reports and share with Andalusia Undertake daily, weekly and monthly site inspections and complete environmental checklists, as required by the ESMP Ensure construction personnel comply with the ESMP and instruct construction personnel in the management of environmental, health, and safety impacts related to their work through regular toolbox talks Investigate and report on any HSE incidents and implement controls to eliminate or reduce the risk of recurrence File and organize all HSE related documentation onsite Provide site inductions to all employees and site visitors and ensure attendance sheets are duly signed by attendees

Table 10-3 below presents proposed roles and responsibilities to be added to Andalusia personnel in implementing the ESMP. It is important to note that all new Project roles are required to be full time given the complexity of the Project and its presence in various locations.

Table 10-3: Recommended Project Roles and Responsibilities

Role	Number of Positions	Job Type	Responsibilities	Minimum Qualifications	Cost (USD) Annually
Project Manager (15 years of experience)	1	Full Time	Make resources available for the implementation of the ESMP Assess and develop capacity building needs in order to effectively implement the ESMP Ensure all provisions of the ESMP are integrated into contractor and subcontractor environmental, social, health and safety management systems Ensure all provisions of the ESMP are integrated into the Project procedures and manuals Report to Andalusia on the environmental, social, health and safety performance of the project	Fluent in Arabic and English Master's degree in Public Administration, or Sustainable Development, or Environment, or International Development, or Business Administration, or Political Sciences, or Social Sciences, or Medical & Health Sciences or a related field Previous work experience with similar projects, in particular with international agencies, is strongly recommended Demonstrated experience and success in the engagement of and working with government counterparts, the private sector and NGOs, creating partnerships and leveraging financing for activities of common interest; Good analytical and problem-solving skills Experience in adapting projects based on conclusions and recommendations coming from regular monitoring, external evaluations and self-assessment activities Ability and demonstrated success to work in a multi-disciplinary teams of scientists, engineers, economics, designers, technicians, and educators or communications specialists, to effectively organize and lead it and to motivate its members and other project counterparts to effectively work towards the Project's objective and expected outcomes;. Strong resource	Existing within Andalusia

Role	Number of Positions	Job Type	Responsibilities	Minimum Qualifications	Cost (USD) Annually
				mobilization, negotiations and communication skills and competence in handling Project's external relations at all levels Excellent communication skills Computer proficiency (MS Office package, Internet) is a must Self-starting, independent and responsible personality; Demonstrated ability to manage and motivate people in a complex environment and achieve set goals under time pressure Proven ability to think strategically, express ideas clearly and concisely, work both independently and in teams, and demonstrate self-confidence combined with sensitivity to gender and culture Knowledge of change management and institutions at national and local levels would be an advantage	
Environmental, Health and Safety Head (10 years of experience)	1	Full Time	Implement the ESMP Support HSE Technicians in ensuring project compliance with applicable national laws and regulations, ESMP and AfDB OSs Will periodically conduct audits and assessments of HSE management measures and procedures Ensure that subcontractors have developed their own environmental and social site-specific plans and procedures Ensure that all plans are communicated to all workers via formal training and toolbox talks Ensure effective coordination and cooperation between the subcontractors to ensure the implementation of the ESMP and all management systems onsite Monitoring the HSE performance of the system and applying adequate actions to avoid or minimize the risks if necessary In instances of non-compliance, ensure appropriate corrective and preventative actions are immediately defined and implemented	Fluent in Arabic and English Experience working on construction sites Holding a Diploma or Degree in Occupational Health and Safety or relevant degree Knowledge of and ability to use management concepts and principles including goal setting, planning and execution Possess strong knowledge of OHSAS 45001, IS014001 standards Qualified as an internal auditor Strong knowledge of relevant HSE principles.	20,000

Role	Number of Positions	Job Type	Responsibilities	Minimum Qualifications	Cost (USD) Annually
			Review and approve all inspection activities performed by HSE Technicians Prepare weekly and monthly HSE reports and share with the Project Manager	Knowledgeable in regulatory agency, and contractor HSE requirements Experience managing HSE staff Experience in preparing and updating HSE statistical tracking and trending data Ability to carry out incident investigation and root cause analysis Proficient in the use of MS Office Applications (Words, Excel, PowerPoint, etc). Able to travel at short notice as and when required Organizational skills Documentation skills HSE relevant trainings, NEBOSH or equivalent	
HSE Technician and Inspector **(minimum 2 years of experience)**	2	Full Time	Be present on site during high-risk construction activities, such as scaffolding Undertake daily, weekly and monthly site inspections and complete environmental checklists, as set out in management plans Ensure construction personnel comply with the ESMP and instruct construction personnel in the management of environmental, health, and safety impacts related to their work through regular toolbox talks Investigate and report on any HSE incidents and implement controls to eliminate or reduce the risk of recurrence Ensure all construction activity HSE impacts are contained onsite, and within areas identified to be impacted Report all incidents to the HSE Manager immediately Regularly monitor the construction activities to assess the risk to the environment and implement appropriate actions to control any identified risk File and organize all HSE related documentation onsite Provide site inductions to all employees and site visitors and ensure attendance sheets are duly signed by attendees	Fluent in Arabic and English Proven experience on construction sites as HSE technician In depth knowledge of legislation (e.g. OSHA/Law 12/2003) and procedures Knowledge of potentially hazardous materials or practices Experience in writing reports and policies for health and safety Familiarity with conducting data analysis and reporting statistics Proficient in MS Office; Working knowledge of safety management information systems is a plus Outstanding organizational skills Diligent with great attention to detail Excellent communication skills with the ability to present and explain health and safety topics	14,000

Role	Number of Positions	Job Type	Responsibilities	Minimum Qualifications	Cost (USD) Annually
				BSc/BA in safety management, engineering or relevant field is preferred Certificate in occupational health and safety Ability to carry out incident investigation and root cause analysis Able to travel at short notice as and when required	
Labor Compliance Officer (LCO) (minimum 5 years of experience)	1	Full Time	Act as the Project focal point for local communities should they have any complaints Act as the Project focal point for employee management activities and worker grievance mechanism Oversee the implementation of the Project's grievance mechanism, ensuring that worker and community complaints are resolved and followed up with Ensure the implementation of all social management plans, as well as ensure that all subcontractors are complying with social management plans Interview workers on site randomly to ensure all subcontractors are providing their workers with reasonable terms of employment that are complying with the AfDB's OSs and Andalusia's ESMP Ensure all workers are fully aware of their rights Report any social non-compliances to the Project Manager	Fluent in Arabic and English Bachelor's degree in sociology Excellent communication skills Excellent physical condition Experience working with people from different backgrounds and mentalities Knowledge of a local community's needs and the ability to interview others to get needed information Identifying the root cause of disputes and using negation tactics to encourage resolution\ Strong public speaking skills to present at public and private meetings Promotional skills are essential to effectively share Andalusia's message with local community Strong writing skills Able to travel at short notice as and when required	7,000

10.5 Current Management Programs of the Existing Facilities

Based on the documents reviewed (APPENDIX 1 Documentation Reviewed most of the available E&S policies do include multiple procedures for identification of risks as well as recommended corrective actions. These policies are supplemented by management plans and procedures in separate documents.

There is a Hazardous Material & Waste Management Plan for all operating facilities. This Plan emphasizes the appropriate handling procedures, the conductance of risk assessments, provision of MSDS, PPE,

Chemical spill kit, biological spill kit and underlines storage conditions of hazardous material. Also, there is a safety management plan that includes hazard identification (accidents, vibration, electrical, fire, physical, chemical, ergonomic, violence work stress), establishment of OHS committee with its roles and responsibilities, the organization of reporting systems and trainings (25% of workers are obligated to be trained on fire safety), pre-employment and periodic medical examination as well as conducting audits using available checklists

There is also a specific lab safety plan addressing safe handling of biological hazardous material, equipment, fire, electricity, PPE, waste, spills (bio/chemical) and underlines the procedures for risk assessment and management as well as hand hygiene.

There is also a Radiation safety plan emphasizing the importance of conducting specific lab work as Complete Blood Count and dermatological examination every 6 months along with radiation monitoring and checking of personal dosimeters and lead shielded PPE.

Also available is an Infection Control Management plan that includes Surveillance for and Prevention of Healthcare-Associated Infections (HAIs), Prevention of Infections Associated with Medical Equipment and Environment, Prevention of Occupationally Acquired Infections and/or Transmission by Infectious Staff to Others and investigation and controlling outbreaks.

There is also a specific emphasis on Needle stick procedure and recordings of accidents. An Infection control plan during construction and renovation was also provided.

Additionally, there is an Occupational health plan obliging the presence of an Employee Health Clinic, illustrating Pre-employment and Immunization guidelines, Work restrictions of infected HCW, Pregnant HCWs, Post exposure prophylaxis Hep B, HIV, Hep C.

A food safety management plan was also available to manage the safe handling of food along with management of Fire, Mechanical, Infection, environmental health hazards in the kitchen. It also tackles the general design, the availability of First aid, PPE and management, accidents, waste, electrical safety.

Lastly, there is a Utility management plan that includes separate maintenance procedures for medical equipment.

10.6 Environmental and Social Impacts and Mitigation Measure

The mitigation/management measures for the different environmental and social components identified in the impact assessment are provided in Table 10-4 and Table 10-5 below. These measures are designed to enable the Project to manage its impacts and bring out a residual impact of a lower significance.

Table 10-4: Environmental and Social Mitigation/Management Measures during the Construction Phase

Component		Potential Impact	Mitigation/Management Measures	Impact Category	Impact Significance Before Mitigation	Residual Impact After Mitigation	Responsibility	Timeframe	Associated Cost (USD)[15]
Construction Phase									
Environment	Air	Reduced air quality	• Ensure all areas where excavation and earth works are taking place are cordoned off • Make public announcements informing the surrounding community, of construction works timing and location • Perform construction works during the daytime only • Ensure that ground in areas that are heavily used by vehicles and machinery are well compacted • Soil resulting from earthworks will be stockpiled in suitable areas with proper dust control measures such as covering • Regular wetting of dusty surfaces of the construction areas will be performed • Implementation of dust suppression measures such as water spraying on roads, observing speed limits and track maintenance • Cover vehicles transporting material that could disperse dust and minimize drop heights when loaders dump soils into trucks • Perform regular maintenance and monitoring of all fuel-burning equipment • Ensure all workers wear appropriate PPE to avoid the inhalation of dust and gases • No burning of waste, such as plastic bags, cement bags and litter, is permitted on-site • Ensure that equipment/machineries are turned off when not in use • Ensure that vehicles and trucks comply with the limits for exhaust emissions set by Prime Minister Decree 1095/2011 • Power generation units shall comply with the emission limits set by Decree 964/2015 amending Law 4/1994 for diesel fuelled engines Additional mitigation measures for PM10 emissions may include the following: • Dust prone materials, must be sheeted or prevented in other appropriate ways from becoming wind-borne	Direct	Major	Moderate	Andalusia HSE Independent E&S Consultant	During construction	Included in EPC Contract

[15] Mitigation/Management Measures defined in **bold** are to be financed by the budget allocated for the ESMP.

Component		Potential Impact	Mitigation/Management Measures	Impact Category	Impact Significance Before Mitigation	Residual Impact After Mitigation	Responsibility	Timeframe	Associated Cost (USD)[15]
			• Soil and other earthen stockpiles, and other dust generating materials, that are to remain undisturbed for some time, should be covered or otherwise stabilised to minimise wind blown dust • Where activities could generate dust clouds, dust suppression techniques must be adopted, for example water sprays and dampening of access roads and the frequency of spraying will be determined by the site manager on a site specific basis. Suppression techniques should be employed more frequently during dry weather • Materials kept at site, including the stockpiling of soils, should be protected by appropriate measures, for example membranes or spraying with a binding agent • All containers will be covered or enclosed to prevent escape of dust and waste materials during loading and transportation • Efforts should be made to use electricity from the grid and use of diesel generators should be minimised • Diesel generator sets should be regularly maintained to minimise the emissions • Soil stockpile heights should be kept to a minimum height with grading to stabilise side slopes to reduce the risk of erosion • Activities will be planned to ensure that, as far as practical, particularly dusty activities are not carried out in unsuitable weather conditions (e.g. dry/windy) unless suppression is in place • All working areas should be kept in a clean and tidy condition • Materials will be positioned away from residential areas, places of public access or drains						
	Noise	Noise induced hearing loss	• Perform construction works during the day • Include signage in areas where high noise emitting activities will be taking place • Make public announcements informing the surrounding community construction works timing and location • Fixed and mobile equipment (e.g., generators) will be located away from sensitive receptors • Ensure that generators, pile driving machines, pneumatic tools and other heavy machinery shall be fitted with the appropriate noise filters in the form of silencers/mufflers • Elevated noise areas and equipment emitting elevated noise emissions should be identified and all persons working on/in the elevated noise area should be provided with hearing protection • Rubber or other suitable material padding will be provided to fixed equipment so that vibration impact can be absorbed and be prevented from travelling	Direct	Moderate	Minor	Andalusia HSE Independent E&S Consultant	During construction	Included in EPC Contract

Component		Potential Impact	Mitigation/Management Measures	Impact Category	Impact Significance Before Mitigation	Residual Impact After Mitigation	Responsibility	Timeframe	Associated Cost (USD)[15]
			• Regular maintenance of heavy machinery and equipment shall take place • Machinery and equipment not in use will be switched off • Avoid high noise emitting activities after sunset and before sunrise • Avoid transporting materials to the site after sunset and before sunrise • Consider alternative routes that avoid residential areas						
	Water	Reduced water supply to communities	• Ensure that construction activities are carried out in a manner so as to minimise water consumption as far as practically feasible • In order to minimize water consumption, any possible reuse of grey water, previous separate collection and any treatment, shall be considered for dust suppression • Water containers/tanks and hoses/connections shall be regularly inspected to ensure they are waterproof and to promptly detect any water leakage • Ensure that washing/cleaning activities (e.g. machineries washing, toilets flushing/cleaning, etc.) are carried out through methodologies requiring low water consumption or dry cleaning if possible • Install water saving fittings (taps, showerheads, urinals, etc.) in toilets of site offices • Monitor and record supplied water and water consumption quantities on a regular basis • Discharge of wastewater to the soil or groundwater shall be avoided at all costs • Use synthetic turfs for any planned landscapes in the site offices	Direct	Minor	Insignificant	Andalusia HSE Contractor HSE	During construction	Included in EPC Contract
	Waste	Soil contamination	• Ensure all construction waste is stored onsite and properly disposed of at licensed facility and transported by a licensed contractor • Suitably covered general waste receptacles must be placed on a drip tray and must be available at all times as to minimise waste and conveniently placed for the collection of waste every day from site for disposal at a licensed waste facility • Bins should be clearly marked and lined for efficient control and safe disposal of waste • Different waste bins, for different waste streams must be provided to ensure correct waste separation • Waste receptacles should be removed out on a daily basis to prevent any windblown waste and/or visual disturbance • All general waste must be removed from site on a daily basis and disposed of at a registered or licensed disposal facility. Records of appropriate disposal must be maintained onsite. Under no circumstances are the waste receptacles be left or stored onsite	Direct	Minor	Insignificant	Contractor HSE Andalusia HSE	During construction	Included in EPC Contract

Component		Potential Impact	Mitigation/Management Measures	Impact Category	Impact Significance Before Mitigation	Residual Impact After Mitigation	Responsibility	Timeframe	Associated Cost (USD)[15]
			• Materials from any earthworks must be recycled and re-used where possible • Concrete mixing must take place within a designated area at each site. Areas where concrete is mixed must be cleaned up and the apparatus removed at the end of each day. Concrete mixing is to be undertaken on an impervious surface and/or drip tray and any run-off contained. Concrete mixing must be controlled and measured to activity requirements to prevent waste • Hazardous waste is not to be mixed or combined with general waste earmarked for disposal at a municipal landfill site • Hazardous waste must be disposed using techniques appropriate to the situation as per the Waste Management Plan to be developed for the project. The HSE Manager must identify an approved waste disposal site at the inception of the Project • Hazardous waste bins must be clearly marked and stored in a contained, restricted area (or located on an impermeable surface) and covered with a lid • All hazardous waste must be removed from site frequently and disposed of at a registered or licensed hazardous disposal facility. Records of appropriate hazardous waste disposal certificates must be maintained onsite. Under no circumstances are the hazardous waste receptacles to be left or stored on-site • It may be feasible for the waste to be transported to a central point from where it can be collected in bulk by the waste disposal company. It should however be noted that transport of hazardous materials must be done in accordance with applicable legislative control						
	Soil	Soil contamination	• No hazardous liquids (such as paints and solvents) are to be stored directly on the ground surface during construction • Any generators on site must be placed on a drip tray as to prevent soil or surface water contamination. • Designate areas for the proper storage and handling of paints, oils, lubricants and fuels • Re-fuelling and maintenance areas should include some form of secondary containment to avoid spillages • Spill kits are to be distributed around the site in strategic areas to allow for speedy spillage cleanup • All toilets onsite shall be connected to a septic tank to be established onsite. Its capacity shall be at least 110% of the estimated quantity of sewage/wastewater to be collected • Regular inspection on the tanks and pipes shall be performed to ensure there is no leakage or overflow	Direct	Minor	Insignificant	Andalusia HSE Contractor HSE	During construction	Included in EPC Contract

Component		Potential Impact	Mitigation/Management Measures	Impact Category	Impact Significance Before Mitigation	Residual Impact After Mitigation	Responsibility	Timeframe	Associated Cost (USD)[15]
			• Regular inspections and maintenance of septic tanks shall be ensured in order to verify and allow effective operation of the sewage collection system • Wastewater is to be collected by a licenced contractor and discharged into a licensed location (wastewater treatment plant or discharge point) • Documentation of wastewater collection and disposal shall be maintained and kept on site						
	Flora and Fauna	Habitat loss and fauna disturbance	• Limit all construction activities to the boundaries of the working area; reinstate any damage caused by any excursions beyond this	Direct	Minor	Insignificant	Andalusia HSE Contractor HSE	During construction	Included in EPC Contract
Socio-Economic	Project Induced In-Migration	Resentment by locals as a result of lost employment opportunities to migrants	• Prepare job descriptions for the types of employment and supply chain opportunities to be provided to/by local people and businesses for the construction phase of the Project • Assign a community liaison officer for the Project • Prepare a stakeholder engagement plan which includes pre-construction information meetings with locals to discuss potential impacts and mitigations, as well as employment opportunities • Prepare a workers accommodation management plan in the event of employing a significant number of migrant workers. The plan should establish requirements for accommodation selection as well as an inspection plan to ensure the provided accommodation is up to standard.	Direct	Moderate	Minor	Andalusia LCO	Prior to construction During construction	Included in EPC Contract
	Child/Forced Labour	Child labour, forced labour and non-compliance with regulations	• Prepare a Code of Conduct to be delivered as part of the induction for all workers • Ensure contractors and sub-contractors have HR policies, procedures and Code of Conduct aligned with Egyptian law and carry out regular monitoring to confirm their implementation. If not available by contractors, ensure Andalusia's Code of Conduct is signed by all contractors and their workforce • Ensure provisions of the Code of Conduct are agreed on by subcontractors and suppliers, and its provisions included as clauses in contracts • Undertake regular random monitoring (at least once a week) of all labourers onsite by means of a labour inspection checklist to ensure compliance with the Code of Conduct and procedures • Review certification documents of subcontractors and suppliers to ensure compliance with regulations • Prepare and implement a stringent selection and evaluation process for the selection and management of contractors	Direct	Moderate	Minor	Andalusia LCO	Prior to construction During construction	Included in EPC Contract

Component		Potential Impact	Mitigation/Management Measures	Impact Category	Impact Significance Before Mitigation	Residual Impact After Mitigation	Responsibility	Timeframe	Associated Cost (USD)[15]
			and subcontractors with particular focus on environmental, health and safety and labour provisions.						
Cultural Heritage		Destroyed, disturbed or removed cultural heritage	• Any chance finds or suspected evidence of archaeological and/or historical materials would be immediately reported by any of the construction workers, or other parties involved in the construction phase and all works should be stopped immediately, until further notice • Chance finds should be immediately reported to the Egyptian Authority of Antiquities	Direct	Moderate	Minor	Andalusia HSE Contractor HSE	During construction	Included in EPC Contract
Health and Safety	Electrical Safety	Injury from electrocution and burns	• Marking all energized electrical devices and lines with warning signs • Locking out (de-charging and leaving open with a controlled locking device) and tagging-out (warning sign placed on the lock) devices during service or maintenance • Checking all electrical cords, cables and hand power tools for frayed or exposed cords and following manufacturer recommendations for maximum permitted operating voltage of the portable hand tools • Protecting power cords and extension cords against damage from traffic by shielding or suspending above traffic areas • Appropriate labelling of high voltage equipment (‘electrical hazard’) and where entry is controlled or prohibited • Establishing “No Approach” zones around or under high voltage areas • Ensure workforce involved in electrical works are competent and have appropriate supervision	Direct	Moderate	Minor	Andalusia HSE Contractor HSE	During construction	Included in EPC Contract
	Machine and Mechanical Safety	Injuries from falling objects, moving equipment/machines	• Implementation of manufacturer’s safety devices to protect workers when using machinery • Establishment, maintenance and review of safe working procedures • Conducting risk assessment to ensure safety in the use of machinery by reducing the associated risks • Risk assessment should be completed by employers to ensure that the machinery is safe and to provide a safe system of work • Workers should be consulted to reflect their views and experiences, and should actively participate in the risk assessment procedures • Control of risks through engineering controls, such as where a machine or equipment has an exposed moving part or exposed pinch point that may endanger the safety of any worker, the machine or equipment should be equipped with,	Direct	Moderate	Minor	Andalusia HSE Contractor HSE	During construction	Included in EPC Contract

Component		Potential Impact	Mitigation/Management Measures	Impact Category	Impact Significance Before Mitigation	Residual Impact After Mitigation	Responsibility	Timeframe	Associated Cost (USD)[15]
			and protected by, a guard or other device that prevents access to the moving part or pinch point • Guards should be designed and installed in conformance with appropriate machine safety standards • Apply administrative controls, including appropriate procedures, training and systems of work; and use of PPE						
	Hazardous Materials	Health deterioration from liver, kidney irritation	• Ensure all hazardous material storage areas are adequately cordoned off and ample signage displayed • Provide appropriate training to site personnel on the handling and use of hazardous materials • Maintain storage areas to ensure that they are organized, secure, clean and dry • Record all hazardous materials held on site in an inventory with Materials Safety Data Sheets (MSDS) available in the appropriate language • Prepare procedures for handling and treatment in the event of spillage • Provide secondary spill containment for bulk storage and tanks • Provide spill kits and fire extinguishers in areas containing hazardous materials • Wastes, chemicals and fuels shall be stored within impermeable bunds of 110% the volume of the container • Conduct regular inspection of all bulk containment facilities and effluent holding tanks to ensure integrity of storage • Provide PPE that is fit for the task to prevent injury and exposure to hazardous materials • Train staff in the correct selection, use and maintenance of PPE. Inspect PPE regularly and maintain or replace as necessary • Inventory dangerous substances and develop a clear policy and procedure for control and management of risks (accidents, incidents and emergencies) • Classify areas where hazardous explosive atmospheres or chemicals may occur into zones • Convey of information and proper training to employees to control or deal with the risks arising from dangerous substances	Direct	Moderate	Minor	Andalusia HSE Contractor HSE	During construction	4,000

Component		Potential Impact	Mitigation/Management Measures	Impact Category	Impact Significance Before Mitigation	Residual Impact After Mitigation	Responsibility	Timeframe	Associated Cost (USD)[15]
	Traffic Management	Accidents and collisions	• Develop a Traffic Management Plan for the construction phase • Training and licensing industrial vehicle operators in the safe operation of specialized vehicles such as backhoe loader, including safe loading/unloading and load limits • Safety belts are to be worn by the driver and all passengers in the vehicle • Ensuring moving equipment with restricted rear visibility is outfitted with audible back-up alarms • Establishing rights-of-way (segregated from pedestrian areas), site speed limits, vehicle inspection requirements, operating rules and procedures (e.g. prohibiting operation of forklifts with forks in down position), and control of traffic patterns or direction • Restricting the circulation of delivery and private vehicles to defined routes and areas, giving preference to 'one-way' circulation, where appropriate • No persons are to be transported on the back of light duty vehicles • The use of cell-phones while driving is prohibited • Traffic rules are to be established and drivers are to be made aware of these rules through training sessions and toolbox talks	Direct	Moderate	Minor	Andalusia HSE Contractor HSE	During construction	Included in EPC Contract
	Slips, Trips and Falls	Injuries	• Assess the causes of slip, trip and fall hazards and address accordingly • Try to place equipment to avoid cables crossing pedestrian routes and use cable guards to cover cables where required • Ensure suitable footwear is worn in areas likely to pose slip, trip or fall hazard • Make sure rugs or mats are securely fixed and that edges do not present a trip hazard • Improve visibility, lighting and hand rails. Add tread markers or other floor markings where visibility is poor • Ensure barricading is in place where it is needed, especially around areas below ground level, and ensure covering all pits and manholes	Direct	Moderate	Minor	Andalusia HSE Contractor HSE	During construction	Included in EPC Contract
	Manual Handling	Spinal disc problems and musculoskeletal disorders that range in severity from minor	• Implementation of a safe system of work plans for site-specific tasks, providing information on the use of mechanical aids • Reorganization of a work activity to allow loads to be handled at a safe height or the provision of instruction to workers on how to use handling aids or handle loads safely • Use of mechanical aids for all or part of the activity • Redesign manual processes to avoid lifting/repetitive activities	Direct	Moderate	Minor	Andalusia HSE Contractor HSE	During construction	Included in EPC Contract

Component		Potential Impact	Mitigation/Management Measures	Impact Category	Impact Significance Before Mitigation	Residual Impact After Mitigation	Responsibility	Timeframe	Associated Cost (USD)[15]
		medically controlled conditions to disabling injuries	• Install mechanical lifting aids where possible • Reorganization of work area or materials • Where handling will still take place, instruction in safe lift techniques • A job rotation system to be introduced so that workers are not involved in this activity for long periods of time • Assess tasks throughout the process, with particular focus on heavy and repetitive tasks						
	COVID-19	COVID-19 Cases and Outbreak	• Wearing a face mask and keeping physical distance with other people of at least 1,5-meter distance. • Avoid shaking hands. • Regularly and thoroughly washing hands with soap and water or cleaning hands with an alcohol-based hand rub as recommended by WHO. • Following good respiratory hygiene. This means covering mouth and nose with bent elbow or tissue when coughing or sneezing. • Avoiding touching eyes, nose and mouth. • Cleaning and disinfecting frequently touched objects and surfaces. • Informing the supervisor or manager when a worker does not feel well, especially if they have a fever, cough and/or difficulty in breathing. • Ensure all workers are COVID-19 vaccinated before being hired. Vaccines are also available and provided free of charge by the Ministry of Health.	Direct/Indirect	Major	Moderate	Andalusia HSE Contractor HSE	During construction	Included in EPC Contract
Community Health and Safety	Traffic	Traffic accidents	• Develop a Traffic Management Plan for the construction phase • Ensure all vehicles/trucks follow traffic rules • Transportation of material to the Project site should occur only during daytime working hours • Avoid material delivery during rush hours so as not to increase traffic congestion • Organize workers buses arrival and departure to avoid traffic congestion • Ensure all drivers are properly trained	Indirect	Moderate	Minor	Andalusia HSE Contractor HSE	During construction	Included in EPC Contract

Component		Potential Impact	Mitigation/Management Measures	Impact Category	Impact Significance Before Mitigation	Residual Impact After Mitigation	Responsibility	Timeframe	Associated Cost (USD)[15]
	Security	Health and safety hazards to community Theft/tampering of equipment	• Erect security fence around the site • Train security to perform regular patrols of the site • Check IDs of all persons before entering the site to ensure they are part of the workforce • Ensure all equipment is securely stored with restricted access		Moderate	Minor	Andalusia HSE Andalusia Security	During construction	Included in EPC Contract

Table 10-5 Environmental and Social Mitigation/Management Measures during the Operation Phase

Component	Potential Impact	Mitigation/Management Measures	Impact Category	Impact Significance Before Mitigation	Residual Impact After Mitigation	Responsibility	Timeframe	Associated Cost (USD)[16]

[16] Mitigation/Management Measures defined in **bold** are to be financed by the budget allocated for the ESMP.

Environment	Air Quality	Reduced air quality	• Develop an Indoor Air Quality Management Plan and a vehicle inspection and maintenance procedure • Strictly follow manufacturer/supplier instructions • Ensure MSDS for all chemicals are available and shared with staff/ workers handling them • Ensure all areas have proper ventilation in place (active or passive) • Limit the exposure time and/or usage time of tools/activities resulting in dust or fumes • Provide respirators for use where harmful dusts or fumes exist • Ensure all machine, equipment and tools are regularly maintained and serviced • Switch off any machine, equipment or tool that is not in use	Direct	Moderate	Minor	Andalusia HSE	During operation	Included in the budget
	Noise	Noise induced hearing loss, tinnitus, loss of focus	• All areas with high noise emitting activities showed be clearly demarcated with signage • Ear protection should be worn at all times during high noise emitting activities • Apply source control techniques to reduce noise, such as reducing speed of moving parts, reducing friction, • Rotational activities should be performed to reduce staff and patient exposure time to high noise emitting activities • All equipment should be regularly maintained/serviced for better operation • Where applicable, install rubber platforms to reduce noise emissions from vibrations • Select equipment fitted with silencers	Direct	Moderate	Minor	Andalusia HSE Independent E&S Consultant	During operation	Included in the budget
	Water	Reduced water supply to communities/pressure on water network	• Launch a resource efficiency campaign across the hospital (signage, seminars, etc.) • Ensure that washing/cleaning activities (e.g. machineries washing, toilets flushing/cleaning, etc.) are carried out through methodologies requiring low water consumption or dry cleaning if possible • Increase “dry landscaping” (xeriscaping) onsite and decrease water intensive turfs • Use drip irrigation techniques • Select vegetation that does not require large quantities of water to grow • Install resource efficient fittings	Direct	Minor	Insignificant	Andalusia HSE	During operation	2,000 and included in EPC Contract (for synthetic turf)

	Waste	Soil contamination/pressure on landfills	**Non-Hazardous Waste** • Develop waste management awareness campaigns across the hospital (signage, seminars, newsletters, etc.) • Distribute colour coded waste receptacles across the hospital and ensure they are labelled with photographic/visual references • Establish a waste storage area onsite where large waste bins for each type of waste are available • Empty waste bins into the main waste dumping area on a daily basis • Train and inform all maintenance workers on waste segregation • Identify recycling companies which can purchase the various types of recyclable waste generated • Different waste bins, for different waste streams must be provided to ensure correct waste separation • Non-recyclable waste must be removed from site on a daily basis and disposed of at a registered or licensed disposal facility by a licensed entity. • Records of appropriate disposal must be furnished to Andalusia on a monthly basis. Under no circumstances are the waste receptacles be left or stored onsite **Hazardous Waste** • Establish a hazardous waste storage area as per Law 4/1994 • Hazardous waste is not to be mixed or combined with general waste earmarked for disposal at a municipal landfill site • Hazardous waste must be disposed of using techniques appropriate to the situation as per the Waste Management Plan. The HSE Manager must identify an approved waste treatment and disposal site. • Hazardous waste bins must be clearly marked and stored in a contained area (or located on an impermeable surface) and covered with a lid • All hazardous waste must be removed from site on a monthly basis and disposed of at a registered or licensed hazardous disposal facility. Records of appropriate hazardous waste disposal certificates must be furnished to Andalusia when hazardous waste is removed for offsite disposal	Direct	Moderate	Minor	Andalusia HSE	During operation	4,000

	Wastewater	Health hazard to patients and staff	• Clearly display wastewater handling rules, including liquid waste disposal • Distribute colour coded liquid waste receptacles inside all contaminated wastewater generation areas and ensure they are labelled with photographic/visual references • Ensure all liquid waste is collected on a daily basis and stored in the designated hazardous waste storage area • Records of appropriate disposal must be furnished to Andalusia on a monthly basis • Regularly inspect the wastewater infrastructure (drains, pipelines, manholes, etc.)	Direct	Moderate	Minor	Andalusia HSE	During operation	2,000
	Energy	Greenhouse gas emissions – global warming	• Consider passive designs for cooling, heating and lighting in all buildings • Install energy efficient lighting • Consider designing natural ventilation systems • Install motion sensors for lighting • Ensure buildings are well insulated to avoid the escape of hot and/or cool air depending on season • Ensure all equipment and machines are only used whenever required • Install dimmers wherever possible • Unplug high energy demanding equipment when not in use • Switch off computers, printers and all other appliances at the end of day • Use timers for air conditioning and ventilation systems • Install energy meters to monitor consumption	Direct	Major	Moderate	Andalusia HSE	During operation	Included in the budget and EPC Contract
Socioeconomic	Labour Conditions and Community Wellbeing	Poor employee relationships and worker exploitation Poor community engagement causing resentment toward the Project	• Create welfare facilities (i.e. sitting areas, recreational areas, etc.) for staff, patients and visitors • Introduce behavioural and communication training programs • Launch awareness campaigns on the code of conduct/ HR policy developed for the Project • Develop a workers grievance mechanism allowing workers to communicate their complaints without fear of retribution • Prepare a stakeholder engagement plan (SEP) identifying the primary stakeholders, the information to be shared with them and the appropriate communication channels • Develop a community grievance mechanism which will allow community members to come forward with their complaints and grievances, and allowing their grievances to be addressed in a timely manner	Direct	Moderate	Minor	Andalusia HSE	During operation	4,000
	Gender based violence and	Psychological, emotional, physical stress	• Develop and distribute a policy on gender-based violence and discrimination • Develop punitive measures to address cases of gender-based violence and discrimination • Offer counselling services to victims of gender-based violence and discrimination • Increase awareness of the problem and its impact	Direct	Moderate	Minor	Andalusia HSE	During operation	Included in the budget

	discrimination		• Establish a grievance mechanism with specific measures to accommodate complaints on gender-based violence and harassment • Introduce prevention programs as part of curricula focusing on conflict resolution, teamwork, problem solving						
Health and Safety	Injuries, Infection and Diseases	Injuries, Infection and Diseases	• Develop an infection control procedure for the Project defining responsibilities, resources and management/ mitigation measure for potential infection risks within the Project • Ensure only experienced and qualified staff are supervising the use of all equipment and machines • Ensure there is restricted access to the high-risk areas such as imaging devices • No worker is allowed to operate any equipment and/or machine without the appropriate training/induction and written permission to proceed by the technician in charge • Regularly maintain and service equipment and machines • Risk assessments and control measures should be completed as part of the Project involving injury or infection risks • All areas and surfaces are to be cleaned and sanitized frequently according to a pre-established schedule • Only referred patients will be allowed to enter X-Ray room • X-ray department to distribute PPE for operators and patients • Radioactive and Infection safety awareness campaigns (training, signage) to be prepared • The same mitigation measures for waste handling during the operation phase	Direct	Moderate	Minor	Andalusia HSE	During operation	Included in the budget
	Electrical Hazards	Shock, burns, electrocution	• Ensure only experienced and qualified technicians are supervising the use of all equipment and machines • Ensure there is restricted access to the electrical boards • No worker is allowed to operate any equipment and/or machine without the appropriate training/induction and written permission to proceed by the technician in charge • No liquids are to be stored and/or handled near electrical equipment • Install ground-fault circuit interrupters • Regularly maintain and service equipment and machines • Risk assessments and control measures should be completed as part of the Project involving electrical works and safe systems of work certificates issued for all equipment and machines • Working on electrical equipment alone is prohibited – there must be at least one other individual in proximity • Prepare and display clear instructions on how electrical hazards and how to deal with someone who has come in contact with an electrical source • Mitigation measures applied for the construction phase	Direct	Moderate	Minor	Andalusia HSE	During operation	Included in the budget

	Hazardous Materials	Skin, eye, lung irritation	• Develop a hazardous materials management procedure. • Develop a release form for liquid/ solid hazardous materials to track quantities used and ensure proper/safe disposal • Maintain MSDS for all hazardous materials • Establish restricted access areas for liquid/solid hazardous materials/substances • Avoid overusing hazardous materials/substances • Ensure all hazardous material handlers/users are wearing appropriate PPE • Prepare and display procedures on how to handle a chemical spill • Provide spill kits, first-aid kits and fire extinguishers to handle any spill • Ensure all gas cylinders are properly secured in a well ventilated and protected area away from heat and the sun • Ensure all gas cylinders(full or empty) are supported and in an upright position at all times • Mitigation measures applied for the construction phase	Direct	Moderate	Minor			4,000
	COVID-19	COVID-19 Cases and Outbreak	• Wearing a face mask and keeping physical distance with other people of at least 1,5-meter distance. • Avoid shaking hands. • Regularly and thoroughly washing hands with soap and water or cleaning hands with an alcohol-based hand rub as recommended by WHO. • Following good respiratory hygiene. This means covering mouth and nose with bent elbow or tissue when coughing or sneezing. • Avoiding touching eyes, nose and mouth. • Cleaning and disinfecting frequently touched objects and surfaces. • Informing the supervisor or manager when a worker does not feel well, especially if they have a fever, cough and/or difficulty in breathing. • Ensure all workers are COVID-19 vaccinated before being hired. Vaccines are also available and provided free of charge by the Ministry of Health.	Direct/Indirect	Major	Moderate	Andalusia HSE Contractor HSE	During operation	Included in the budget
Community Health and Safety	Traffic	Traffic accidents	• Develop a Traffic Management Plan for the operation phase • Ensure all vehicles/trucks follow traffic rules • Transportation of material to the Project site should occur only during daytime working hours • Avoid material delivery during rush hours so as not to increase traffic congestion • Organize workers buses arrival and departure to avoid traffic congestion • Ensure all drivers are properly trained	Indirect	Moderate	Minor	Andalusia HSE Contractor HSE	During operation	Included in the budget

	Security	Equipment/machine theft Injuries to communities trespassing	• Train security to perform regular patrols of the site • Check IDs of all persons before entering the site to ensure they are either patients, staff or workers • Maintain visitor logs at all entrances and exits • Ensure all equipment is securely stored with restricted access	Indirect					Included in the budget

10.7 Environmental and Social Monitoring Plan

To ensure that the prescribed management measures are being implemented, and that the Project continues to comply with Egyptian environmental and social laws and regulations and the AfDB's OSs, periodic environmental and social monitoring will be carried out by Andalusia, its contractors and subcontractors. Table 10-6 and Table 10-7 below present the recommended environmental and social monitoring to be performed during the various phases of the Project. Monthly reports are to be prepared summarizing the outcomes of each of the monitoring requirements during construction and operation.

Table 10-6 Environmental and Social Monitoring Plan during the Construction Phase

Component	Aspect	Parameter to be Monitored (i.e. activity)	Method	Location	KPI	Frequency	Responsibility	Cost (USD)
Environment	Air	Parameters listed in **Table 3-2**	Instrument/Laboratory	Nearest sensitive receptor (at least one upwind and one downwind of site)	Number of complaints from workers/third parties Compliance with Law 4/1994	Annual	Andalusia HSE Independent E&S Consultant/Laboratory	6,000
	Ambient Noise	Parameters listed in **Table 3-6**	Instrument/Laboratory Visual	Nearest sensitive receptor (at least one upwind and one downwind of site)	Number of complaints from workers/third parties Dust and particles Compliance with Law 4/1994	Annual	Andalusia HSE Independent E&S Consultant/Laboratory	3,000
	Workplace Noise	Parameters listed in **Table 3-7**	Instrument/Laboratory	Work with high noise emitting activities	Number of complaints from workers/patients/visitors Compliance with Law 4/1994	During high noise emitting activities	Andalusia HSE Contractor and Subcontractor HSE Independent E&S Consultant/Laboratory	3,000
		Noise generating activities	Visual	All construction sites	Number of noise complaints from workers/patients/visitors	Daily	Andalusia HSE Contractor and Subcontractor HSE	Overhead cost
	Water	Quantity of water consumed in m^3	Receipt inspection	m^3 of consumed water per month/total worked man hours per month	-	Monthly	Andalusia HSE	Overhead cost

Component	Aspect	Parameter to be Monitored (i.e. activity)	Method	Location	KPI	Frequency	Responsibility	Cost (USD)
	Potable Water	Parameters listed in **Table 3-9**	Laboratory	Water trucks	Number of complaints from workers Number of reported water-related illnesses Non-compliance with drinking standards	Monthly	Andalusia HSE Independent E&S Consultant/Laboratory	3,000
	Waste	Inspection of waste storage areas	Visual	Hazardous and non-hazardous storage areas	Good housekeeping Waste properly segregated Recycled waste rate	Daily	Andalusia HSE Contractor and Subcontractor HSE	Overhead cost
		Non-hazardous and hazardous quantity, type, transportation method, disposal method, manifests	Receipt/records inspection	Office/administration	Quantity of hazardous and non-hazardous waste generated Recycled waste rate	Monthly	Andalusia HSE Contractor and Subcontractor HSE	Overhead cost
	Wastewater	Parameters listed in **Table 3-10**	Laboratory	Effluent discharge point	Number of non-compliances	Quarterly	Andalusia HSE Contractor and Subcontractor HSE	4,000
	Soil	Evidence of soil stains	Visual	Hazardous waste storage areas Hazardous material storage area Beneath and around generators	Quantities of contaminated soil Number of oil/chemical spills reported Proper waste segregation for hazardous and non-hazardous waste Proper hazardous material storage	Daily	Andalusia HSE Contractor and Subcontractor HSE	Overhead cost
	Flora and Fauna	Visual observations for evidence of fauna	Visual	Work sites Vacant land spaces within premises	Number of faunal sightings	Daily	Andalusia HSE Contractor and Subcontractor HSE	Overhead cost
Social	Project Induced In-Migration	Number of workers and their origins	ID checks	Site entrance/gates	Complaints from communities regarding lack of	Daily	Andalusia Security Andalusia LCO	Overhead cost

Component	Aspect	Parameter to be Monitored (i.e. activity)	Method	Location	KPI	Frequency	Responsibility	Cost (USD)
					employment/training opportunities			
	Child/Forced Labour	Inspection of contractors and subcontractors	ID checks Visual	Site entrance/gates	Number of incidents of child/forced labour	Daily		Overhead cost
Cultural Heritage	Chance Finds	Inspections during excavation	Visual	All excavation areas	Number of chance finds	During excavation activities	Andalusia HSE Contractor and Subcontractor HSE	Overhead cost
Staff Health and Safety	Electrical Safety Management	Inspections of electrical devices, cables and connections	Visual	Areas where equipment/machines are being used	Number of incidents/near misses/injuries	Daily	Andalusia HSE Contractor and Subcontractor HSE	Overhead cost
	Machine and Mechanical Safety	Inspection of all equipment and machines	Visual	Areas where equipment/machines are being used	Number of incidents/near misses/injuries	Daily	Andalusia HSE Contractor and Subcontractor HSE	Overhead cost
	Hazardous Materials	Inspection of hazardous material storage area	Visual	Hazardous material storage area	Number of spills and leaks	Weekly	Andalusia HSE Contractor and Subcontractor HSE	Overhead cost
	Traffic Management	Inspection of vehicles/traffic rules	Visual	Parking areas Work sites	Number of traffic violations	Daily	Andalusia HSE Contractor and Subcontractor HSE	Overhead cost
	Slips, Trips and Falls	Inspections of trip, slip and fall hazards in work areas	Visual	Working areas	Number of incidents/near misses/injuries	Daily	Andalusia HSE Contractor and Subcontractor HSE	Overhead cost
	Manual Handling	Inspection of manual activities	Visual	Areas where lifting is required	Number of incidents/near misses/injuries	Daily	Andalusia HSE Contractor and Subcontractor HSE	Overhead cost
Community Health and Safety	Traffic	Delivery of materials	Visual Records of delivery	construction sites	Number of reported accidents Number of complaints from locals regarding traffic congestion caused by the Project	Monthly	Andalusia HSE Contractor and Subcontractor HSE	Overhead cost

Component	Aspect	Parameter to be Monitored (i.e. activity)	Method	Location	KPI	Frequency	Responsibility	Cost (USD)
	Security	Inspection of materials, equipment Inspection of workforce IDs	Visual Records	Site entrances/exits construction sites	Number of theft/tampering incidents	Daily	Andalusia Security	Overhead cost

Table 10-7 Environmental and Social Monitoring Plan during the Operation Phase

Component	Aspect	Parameter to be Monitored (i.e. activity)	Method	Location	KPI	Frequency	Responsibility	Cost (USD)
Environment	Indoor Air	TBD based on chemicals used inside laboratory as per parameters listed under Law 4/1994, Executive Regulation 1095, Annex 8, Table 1	Instrument/Laboratory	Inside chemical laboratories	Number of complaints from workers/patients/visitors Number of incidents/illnesses caused by chemicals Compliance with Law 4/1994	Annual	Andalusia HSE	2,000
	Noise	Parameters listed in **Table 3-7**	Instrument/Laboratory	Inside workshops	Number of complaints from workers/patients/visitors Compliance with Law 4/1994	Once a year to determine noise levels during normal hospital activities	Andalusia HSE	2,000
	Waste	Inspection of waste storage areas	Visual	Hazardous and non-hazardous storage areas	Good housekeeping Waste properly segregated Recycled waste rate	Daily	Andalusia HSE Contractor and Subcontractor HSE	Overhead cost
		Non-hazardous and hazardous quantity, type, transportation method, disposal method, manifests	Receipt/records inspection	Office/administration	Quantity of hazardous and non-hazardous waste generated Recycled waste rate	Monthly	Andalusia HSE Contractor and Subcontractor HSE	Overhead cost

	Wastewater	Parameters listed in **Table 3-10**	Laboratory	Effluent discharge point	Number of non-compliances	Annual	Andalusia HSE Contractor and Subcontractor HSE	200
Socioeconomic	Labour Conditions and Community Well Being	Discussions with neighbours	Survey	Residential areas adjacent to site	Number of complaints from workers Number of complaints from community members	Monthly	Andalusia LCO	Overhead cost
	Gender Based Violence and Discrimination	Discussions with affected workers/patients/visitors	Survey	Within Project boundaries	Number of reported incidents	Monthly	Andalusia LCO	Overhead cost
Staff Health and Safety	Injuries, Infection and Diseases	Inspection of all equipment/ materials with the potential to cause injury or spread diseases	Visual	Within Project boundaries	Number of reported observations Number of incidents	Weekly	Andalusia HSE Contractor and Subcontractor HSE	Overhead Cost
	Electrical Safety Management	Inspections of electrical devices, cables and connections	Visual	Areas where equipment/machines are being used	Number of incidents/near misses/injuries	Daily	Andalusia HSE Contractor and Subcontractor HSE	Overhead cost
	Hazardous Materials	Inspection of hazardous material storage area	Visual	Hazardous material storage area	Number of spills and leaks	Weekly	Andalusia HSE Contractor and Subcontractor HSE	Overhead cost
Community Health and Safety	Traffic and Congestions	Visual	Visual Records	Street where the site is located	Number of reported observations Number of complaints from workers/ community members	Daily	Andalusia HSE Contractor and Subcontractor HSE	Overhead cost
	Inspection of materials, equipment Inspection of staff/ patient IDs	Visual	Visual Records	Entrances/exits	Number of theft/tampering incidents	Daily	Andalusia Security	Overhead cost

10.8 Environmental and Social Management Plans and Procedures

The preparation of the following stand-alone environmental and social management plans are recommended to address the potential environmental and social impacts identified as part of the ESIA. They are to be prepared by Andalusia and adopted by Project contractors for consistency in content and implementation. Contractors having their own management plans are required to align their plans with those of Andalusia. Each contractor during the construction phase will be required to agree to the sample environmental and social contractual clauses presented in Appendix 4. Irrelevant clauses are to be removed by consent from Andalusia.

Each management plan will include applicable legal requirements (if existing), standards, KPIs, responsibilities and mitigation measures. Monitoring and reporting requirements should also form part of the management plans in order to confirm the impacts predicted and provide an early detection mechanism for any unforeseen impacts.

The management plans provided in Table 10-8 below should be prepared for the Project. The plans are to be prepared by an external consultant supported by the Project HSE team and LCO/E&S Specialist.

Table 10-8: Recommended Environmental and Social Management Plans

Management Plan	Content	Applicable Project Phase	Cost (USD)[17]
Air Quality Management Plan	Further define regulatory requirements, responsibilities and management measures to be site specific and identify required training and reporting requirements	Construction Operation (indoor air and noise)	9,900
Noise Management Plan			
Waste Management Plan		Construction Operation	
Water Management Plan		Construction	
Soil Management Plan		Construction	
Wastewater Management Plan		Construction	
Health and Safety Management Plan	To include information on key personnel, hazard evaluation, hazard control measures, training requirements and emergency response plan	Construction Operation	
Hazardous Material Management Plan	Outlines procedures for storage and use of chemicals and hazardous materials, including access and security, provision of PPE and distribution of MSDS information	Construction Operation	
Traffic Management Plan	Provides baseline traffic information, expected traffic movements, optimum traffic routes, road safety rules, site traffic	Construction	

[17] This cost estimate is based on the following cost breakdown:

Item	Unit Cost (USD)	Level of Effort (Days)	Sub-total (USD)
Project Manager	600	2	1,200
Environmental Specialist	450	6	2,700
Social Specialist	450	6	2,700
Health and Safety Specialist	450	6	2,700
Expenses	600	1	600
TOTAL			**9,900**

	rules, training and reporting requirements		
Infection Control Plan	Provides information on the infection control measures, training, responsibilities and resources needs for the Project.	Operation	
Labour Management Plan	Provides information on the hiring process, training, employment needs for the Project and code of conduct with provisions on child/forced labour, discrimination, working hours, insurance, drug abuse, etc.	Construction Operation	
Stakeholder Engagement Plan	Identifies key stakeholders, what information is to be disclosed, channels of communication and most importantly a workers and community grievance mechanism	Construction Operation	

10.9 Training

In order to effectively implement the ESMP, Andalusia Project staff and their contractors (and subcontractors) are recommended to be trained on the relevant environmental and social management procedures. A list of recommended training topics is included in Table 10-9 below. A sample terms of reference for the training to be delivered is presented in Appendix 5. It is strongly advised that the training is delivered by the same firm/individual consultant that will be preparing the ESMP sub-management plans.

Prior to the construction phase, training to Andalusia personnel should be delivered by qualified third parties. It is highly recommended, and more cost effective, that the training be delivered to personnel directly involved in the everyday progress of the Project, such as the Project Manager, HSE Manager, HSE Technicians, LCO/E&S Specialist and Security Manager. Once trained, these personnel can then conduct regular toolbox talks (i.e. training) at Project locations to all contractor and subcontractor employees during the construction phase. Furthermore, workers' HSE induction can include the following topics:

- Waste Management
- Water management
- Soil Management
- Resource Efficiency
- Emergency Response
- Grievance Mechanism
- Code of Conduct

A second training session on the same topics should be delivered to Andalusia prior to the operation phase. The knowledge acquired by Andalusia Project staff is then to be transferred to hospital staff and non-medical workers also in the form of inductions as part of their orientation/welcome packages and regular seminars/campaigns throughout the year. This can be achieved in coordination with administration staff.

The regular delivery of toolbox talks and inductions by Andalusia during the two phases of the Project a) maintains the knowledge acquired by Andalusia from training and b) develops an environmental and social culture amongst the workforce.

Table 10-9: Recommended Training for Andalusia Project Staff

Topic	Number of Sessions	Timeframe	Cost (USD)
Waste Management	2	Once prior to construction Once prior to operation	1,500
Wastewater Management	1	Once prior to construction	1,000
Hazardous Material Handling and Storage	2	Once prior to construction Once prior to operation	1,500
Resource Efficiency	2	Once prior to construction Once prior to operation	2,000
Infection Control	1	Once prior to operation	1000
Health and Safety Management	2	Once prior to construction Once prior to operation	2,000
Security Management	1	Once prior to construction Once prior to operation	500
Labour Management	1	Once prior to construction Once prior to operation	500

10.10 Reporting

Andalusia Group will provide an annual report to AfDB outlining the implementation of the ESMP. This report will be prepared by the HSE Manager of the subcontractor (if applicable) in collaboration with the HSE Manager from Andalusia Group.

The report may include the following elements:

- monthly/annual reporting on KPIs and performance trends;
- monthly/annual reporting on training activities;
- monthly/annual reporting on inspection activities;
- inspection logs, audit reports and status of non-conformities.

10.11 Auditing

In accordance with AfDB requirements, an E&S audit should be scheduled from the second year of project start-up.

10.12 ESMP Costs

Table 10-10 below summarizes the estimated costs associated with implementing the various elements of the ESMP.

Table 10-10: Estimated Costs to Implement the ESMP

Component	Cost (USD)
Recruitment of HSE personnel and LCO/E&S Specialist	40,000
Environmental and Social Mitigation Measures	19,000
Environmental and Social Monitoring	22,200
Environmental and Social Management Plans	9,900
Full GRM Deployment and Monitoring	3,000
Training	10,000
E&S audit from the second year of project start-up	5,000
TOTAL	**109,100**

10.13 Implementation Schedule

Task	August 2022	September 2022	October 2022
Approve ESMP			
Formal disclosure of ESMP by AfDB and Andalusia			
Budget allocation			
Establish and approve Project organizational structure showing environmental and social personnel			
Begin Project staff recruitment process			
Preparation of environmental and social management plans			
Environmental and social training			
Implementation of environmental and social mitigation/management measures			

10.14 Grievance Redress Mechanism

A grievance redress mechanism (GRM) will be established for the Project. The grievance mechanism procedures will aim to address concerns promptly and effectively, in a transparent manner that is culturally appropriate and readily accessible to all workers and community members, and at no cost and without retribution. The Grievance Mechanism procedure described in this subsection is extended to all workers onsite, including permanent workers, casual workers, community members, service providers, consultants, suppliers, and subcontractors working on the Project, at large. The grievance mechanism is a participatory tool for the workers and community members and a mandatory process for the Project. The grievance mechanism will deal with suggestions, concerns, and grievances related to labour and other issues arising from Project specific activities during construction and operation. The grievance mechanism is not designed to obstruct access to other judicial or administrative processes that are available under Egyptian law.

The Project LCO/E&S Specialist will inform all Project workers and community members of the grievance procedure (see below) via notices, webpages and/or during toolbox talks and inductions, and report regularly on its implementation, while always protecting the privacy of affected individuals. Handling of grievances will be done in a discreet, objective, sensitive and responsive to the stakeholders' (i.e. workers) needs and concerns. The mechanism will also allow for anonymous complaints to be raised and addressed.

The LCO/E&S Specialist will regularly meet with the community stakeholder including the local mayor, council leader, NGOs directors, and community advisory panel as detailed in the stakeholder engagement plan. During such meetings, the LCO/E&S Specialist will inform the community stakeholders about the grievance mechanism, explain the available access channels, and how to register a complaint or suggestion, the response procedure, timeframe, explain who will handle the grievance and provide illustrative leaflets as appropriate.

Andalusia already have an ethics committee that is meant to deal with violations to the company's Code of Conduct. The committee will be responsible for treating grievances related to the project from both workers and the community. The committee includes representatives of all levels, top management, human resources stuff, workers, etc. the committee will also include the company's E&S Specialist.

Grievances submission channels are identified as follows:

- Verbally via direct complaints to managers/supervisors
- Verbally by calling a hotline number for receiving grievances
- In writing through filling in a grievance form. Grievance boxes will be distributed across the Project site and inspected weekly by the grievance redress committee
- Electronically, by sending an email to a designated email for communication and receiving grievances.

It will be ensured that the grievance channels will allow for anonymity in case the complainant prefers to be anonymous.

The procedure for workers grievances will be as follows:

Step 1: Informal Discussion

Andalusia encourages all workers and community members to attempt to resolve all disagreements or disputes informally first. This can be achieved by talking directly to a manager and/or supervisor. This allows for the potential to resolve the dispute in a faster manner and avoid escalation. Should the complainant feel that they do not wish to talk to a direct manager and/or supervisor, or if the dispute has not been resolved, they may also informally approach the LCO/E&S Specialist who may arrange for an informal meeting/discussion to resolve the issue.

Step 2: Formal Grievance

In the event that informal discussions were not successful in resolving the issue, the complainant may file a formal complaint, anonymously or non-anonymously, through the completion of a grievance form (Figure 10-2) which can be found in grievance/suggestion boxes in several locations across the Project site. The LCO/E&S Specialist will check grievance boxes every ten days. Once a grievance has been received the LCO/E&S Specialist will make sure it is recorded in a grievance register (Figure 10-3). The LCO/E&S Specialist will be required to acknowledge the grievance within two working days and inform the complainant (if non-anonymous) either verbally or in writing of having received the complaint and next steps. If it is an anonymous complaint, the LCO/E&S Specialist will ensure that all relevant departments are notified of the issue for necessary action to be taken. If it is a non-anonymous complaint, the LCO/E&S Specialist will contact the complainant directly, and if necessary personnel from the relevant department(s), in order to resolve the issue.

A response or resolution to all complaints shall be provided within 15 working days either directly to the complainant in the case of non-anonymous complaints or during a toolbox talk to all workers onsite for anonymous complaints.

Figure 10-2 Sample Grievance Form (Arabic and English)

التاريخ	/ /
رقم الشكوى / الاقتراح	

نموذج شكوى / اقتراح (العمال)

نواصلكم معنا يهمنا، لذا يسعدنا تلقي مقترحاتكم أو شكواكم وسوف يتم التعامل معها باهتمام وشفافية وحفظ سرية مقدمها.

(ملء البيانات الاساسية اختياري ولكن نرجو منك إدخالها لتتمكن من التواصل معكم لمتابعة اقتراحكم / شكواكم)

الاسم:			
العنوان:			
التليفون :			
النوع :			
البريد الإلكتروني :			
اسم الشركة:			
الوظيفة:			
وصف الشكوى :	ماذا حدث:		
	أين حدث:		
	مكان الحدث:	رقم القطعة :	
	ما هو الوضع الحالي:		
تكرار الشكوى :	حدثت مره واحدة (التاريخ .....)		
	أكثر من مرة: (عدد المرات..... .....)		
	تحدث حاليا :	نعم :	لا :
اقتراح الشكوى:	ما هو اقتراحك لحل الشكوى:		
	هل سبق وتقدمت بنفس الاقتراح / الشكوى	نعم :	لا
	في حالة الإجابة بنعم:		
	ما رقم الاقتراح:	تاريخ الاقتراح:	
	هل تم الرد عليكم	نعم:	لا:
مستلم الشكوى			

Reference No:	
Full Name *Note: you can remain anonymous if you prefer or request not to disclose your identity to the third parties without your consent*	**My first name** _____ **My last name** _____ ☐☐**I wish to raise my grievance anonymously (note in this case a response will not be provided)** ☐☐**I request not to disclose my identity without my consent**
Contact Information *Please mark how you wish to be contacted (mail, telephone, e-mail).*	☐ **By Post: Please provide mailing address:** _____ _____ _____ ☐ **By Telephone:** _____ ☐ **By E-mail** _____
Preferred Language for communication	☐ **Arabic** ☐ **English**
Description of Incident or Grievance:	What happened? Where did it happen? Who did it happen to? What is the result of the problem?
Date of Incident/Grievance	
	☐ **One time incident/grievance (date _____)** ☐ **Happened more than once (how many times? _____)** ☐ **On-going (currently experiencing problem)**
What would you like to see happen to resolve the problem?	

Figure 10-3 Sample Grievance Register

Example of the grievance register							
Grievance ID	Name/ address	Question/ grievance/ enquiry/ suggestion	Answer method	Answer	Status	Is response satisfying	Reason for refusal (if applicable)
Format as year.mm.dd and grievance number (e.g. 2015.17.02.01)	Insert name and address of the personal submitting grievance (if signed)	Summary of the question, grievance, enquiry or suggestion	Choose a method (e-mail, personal letter, phone call, information board announcement, etc.	Summary of the response	Date of response, identify whether the grievance is addressed and closed	Yes/ no (if reaction is available)	Insert the reasoning if the grievance is refuse

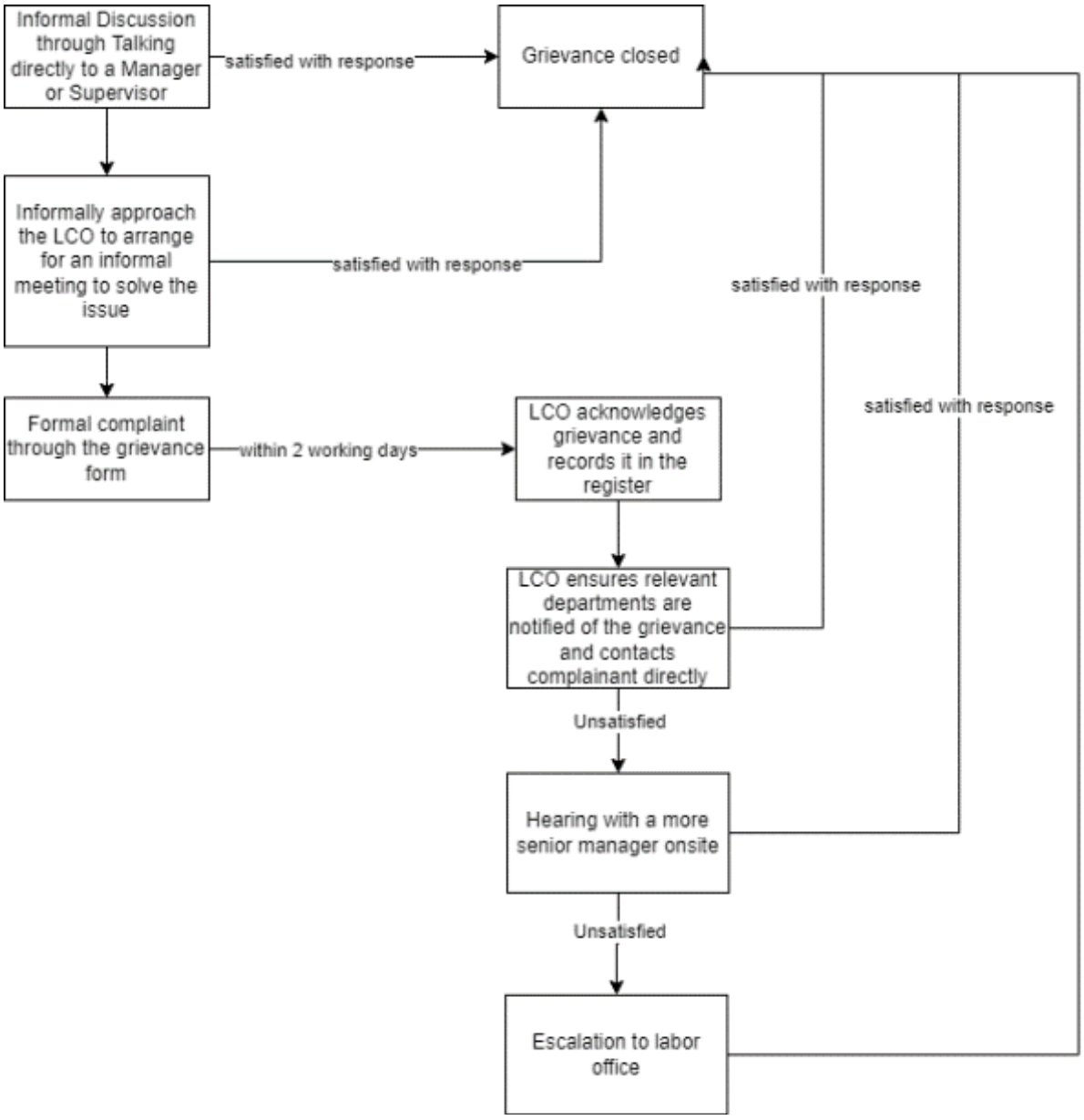
Step 3: Appeal

If the complainant is not satisfied with the response or resolution provided by the LCO/E&S Specialist, he/she will have the right to let the LCO/E&S Specialist know. A hearing with a more senior manager onsite will be arranged within a defined period of time. The complainant will have the right to be accompanied by a colleague and/or worker's representative (in the case of a worker). The senior manager will be required to provide the complainant with a decision within a predetermined period.

Step 4: Judicial Proceeding and Escalation to Labour Office

In the event that the issue/dispute cannot be resolved by Andalusia, the complainant can file their complaint with the local labour office (in the case of a worker) and/or resort to other judicial or administrative processes that are available under Egyptian law.

Figure 10-4 Grievance Mechanism Flow Chart



11 STAKEHOLDER ENGAGEMENT AND CONSULTATION

11.1 Introduction

This section of the ESIA will aim at highlighting the key stakeholders identified as being relevant to the Project and defining their importance, as well as documenting their comments and perceptions towards the development of the Project. Although Scope B ESIAs under Egypt's Law 4/1994 on the protection of the environment do not require public consultations, limited stakeholder engagement activities were undertaken as part of the ESIA's scope of work to address AfDB's OS 1.

11.2 Stakeholder Identification

According to AfDB, stakeholders are defined as "people/communities who may - directly or indirectly, positively or negatively – affect or be affected by the outcomes of projects or programs. Table 11-1 presents the potential primary and secondary stakeholders of the Project that have been identified. Primary stakeholders are those with direct interests and/or are ultimately affected, either positively or negatively, by the Project. Secondary stakeholders are those with a relatively lower interest towards the Project, and/or indirectly affected, either positively or negatively, by the Project. It is, therefore, assumed that the categorization of stakeholders is dependent on two variables, namely; interest of the stakeholder and the relevance/importance of the stakeholder to the Project.

Table 11-1: Identified Stakeholders

Stakeholder Group	Description	Stakeholder Group Relevance / Importance of the Stakeholder to the Project
Primary Stakeholders		
Potentially Affected Communities	Settlements within 2 km from Project activities	Local population residing within a 2 km radius from the proposed Project's location who may be positively or negatively impacted by the Project.
	Households with vulnerable members	Households and communities that will be either positively and/or negatively impacted by the Project.
	Different community members	Community members which may potentially benefit from the Project either as workers.
Governmental Bodies	Ministry of Health and Population (MOHP)	MOHP is the Competent Administrative Authority (CAA) that will be receiving the ESIA and submitting it to the EEAA.
	Giza, Cairo, and Kalubia Governorates	The main role of the Governorate is the provision of support to the Project through providing various permissions needed. The Governorate's Information Centre provides up to date social baselines upon receiving formal requests.
	City Council/Authority (Maadi district council)	City authorities may support in providing baseline data for the area and may also be involved in permitting when a project is located within their jurisdiction.
	Ministry of Environment - Egyptian Environmental Affairs Agency (EEAA)	Responsible for reviewing and approving ESIAs, and monitoring implementation of the Environmental and Social Management Plan.

Stakeholder Group	Description	Stakeholder Group Relevance / Importance of the Stakeholder to the Project
	Environmental Office within the Governorate	Responsible for monitoring the compliance of the Project with environmental requirements.
Contractors and Suppliers	Contracting companies	Companies that are subcontracted by Andalusia Group to execute the demolition, construction and renovation works. Suppliers of upgraded machines and equipment. The provision of the needed resources and the waste management and final safe disposal methods during the Project implementation phase.
International Financial Institutions (IFI)	AfDB	AfDB is the IFI currently appraising the Project in order to provide funding. Project must adhere to AfDB's Operational Safeguards.
Secondary Stakeholders		
Local Traders and Suppliers	Local vendors and suppliers of goods and services	These people own businesses that may benefit from the Project's activities, during all phases of the Project.
Egyptian Line Ministries	Ministry of Manpower	Ministry of Manpower, through local labour offices, is responsible for monitoring the conditions of workers in the Project and mediating any conflicts between the workers and the management.
	Ministry of Housing, Utilities & Urban Communities	Ministry responsible for installing drinking water and sanitation infrastructure and connecting buildings to the network.
	Ministry of Electricity and Energy (MoEE)	MoEE is in charge of electricity and energy related issues. MoEE provides the electricity needed to operate projects.
	Ministry of Interior (MI)	MI is responsible for national and local security, as well as approving emergency response and fire-fighting plans for establishments/projects
	Ministry of Investment and International Cooperation (MIIC)	MIIC is responsible for facilitating investment opportunities in Egypt.
Civil Society	NGOs (International, regional, local)	Local and national NGOs, especially those concerned with healthcare represent local community needs in cases of healthcare. These organizations can also influence the views of others regarding the Project, nationally and internationally.
Academia	• Universities • Research Institutes • Consultancy firms • Experts	Universities, research centres, consultancy firms, and experts are academic and technical entities, which support in conducting studies and providing technical training to various target groups.
Media	Newspaper Social Media	Disclosure of information about the Project

11.3 Stakeholder Engagement Activities

The Consultant prepared a background information document (BID) for the Project which was distributed to stakeholders during a visit to the project surroundings, enabling the process to be free, prior and informed. The BID is presented below. Stakeholder engagement activities comprised of direct interviews with students, shop owners, local vendors, and residents. First an explanation of the Project was provided to the interviewee which included a simple and concise description of the Project; a focus on the positive impacts of the project; clarifications on the negative impacts during the construction phase and providing tentative timelines; and clarification on negative impacts anticipated during the operation phase. After the introduction, the Consultant began discussing the following topics with each interviewee:

- Concerns / questions of community members about the proposed Project
- Impressions and perceptions of community members about the proposed Project
- Record any inquiries about the proposed Project

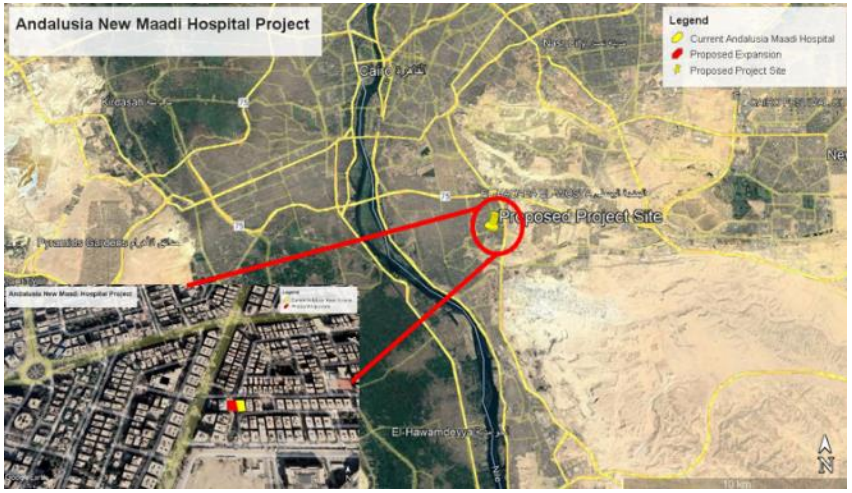
Figure 11-1 Stakeholder Engagement Activity in Maadi

BACKGROUND INFORMATION DOCUMENT

الاثار الإيجابية والسلبية الناتجة من المشروع المقترح

إن الآثار الإيجابية هي في المقام الأول اقتصادية وصحية، بما في فيه من زيادة فرص العمالة والنمو الاقتصادي الإقليمي. بالإضافة لذلك، سيضمن توسعة مستشفى من الدرجة الأولى في المنطقة توفير الرعاية المناسبة للمواطنين وتحسين الصحة العامة للمجتمع. يتضمن التأثير السلبي المحتمل المرتبط بمثل هذه المشروعات التأثير على جودة الهواء والحريق والتخلص من النفايات بطريقة غير ملائمة والتلوث. ومع ذلك، من المقترح أن تنخفض احتمالية حدوث هذه التأثيرات بشكل ملحوظ من خلال الالتزام بتدابير التخفيف التي سيتم إنتاجها من خلال عملية تقييم الأثر البيئي.

موقع المشروع المقترح



تم تعيين م/ محمد ابراهيم من قبل مجموعة اندلسية ليقوم بعملية التقييم للأثر البيئي والاجتماعي لهذا المشروع.
إذا كنت ترغب في الحصول على معلومات اثناء المراحل المختلفة للمشروع او التعبير عن رأيك تجاه المشروع (سواء سلبى او إيجابي)، يرجى إرسال التفاصيل الخاصة بك في موعد أقصاه 14 يونيو 2022 عبر:
محمد ابراهيم
رقم المحمول: 01147401057

مستشفيات أندلسية
ANDALUSIA HOSPITALS

Environmental and Social Impact Assessment for the New Andalusia Hospital in Maadi, Cairo

Background and Project Description

The Environmental and Social Impact Assessment (ESIA) will consider the establishment of the Andalusia New Maadi Hospital, affiliated to Andalusia Group for medical services, which is a private holding company provides medical services in Saudi Arabia and Egypt. The ESIA will be conducted in accordance with relevant Egyptian legislation and the Egyptian Environmental Affairs Agency's (EEAA) Guidelines for Environmental Impact Assessments (2009), as well as the African Development Bank's (AfDB) Operational Safeguards.

The hospital shall comprise of 2 basement floors, a ground floor and 7 top floors with a total floor area of 4,165 m^2. Additionally, the hospital will include designated departments and facilities for physiotherapy, chemotherapy, radiotherapy, imaging, endoscopy, surgery, maternity, and a cardiac centre. This project is expected to deliver world class health care to the area improving accessibility to treatment and improving the overall health of the community.

The construction of the hospital is expected to begin in mid-2022 and last for a duration of two and a half years, where operations are expected in early 2025.

Positive & Negative Impacts

Positive impacts primarily target the economy and the health of the people, whereby the project will provide job opportunities for different labour classes throughout its life. The expansion of this first-class hospital in the area will ensure proper care is provided for people and improve the overall health of the community. Potential negative impacts associated with such projects during construction include reduced air quality, noise emissions, inappropriate waste disposal and contamination. Negative impacts during operation include inappropriate waste disposal and improper infection control. However, it is envisaged that the probability of these impacts eventuating will be significantly

Location of the Proposed Project

Eng. Mohamed Ibrahim has been appointed by Andalusia Group as the independent environmental assessment practitioner to undertake the ESIA process for this project.

Should you wish to express your concerns/opinion about the Project or be informed on the progress of the Project, please contact the following person by no later than 14 June 2022.

Mohamed Ibrahim

Tel: +201147401057

مستشفيات أندلسية
ANDALUSIA HOSPITALS

تقييم الأثر البيئي والاجتماعي لإنشاء مستشفى أندلسية الجديدة بالمعادي

وصف المشروع

سوف تغطى دراسة تقييم الأثر البيئي والاجتماعي (ESIA) إنشاء مستشفى أندلسية الجديدة في المعادي، تابعة لمجموعة أندلسية للخدمات الطبية، وهي شركة قابضة خاصة تقدم خدمات طبية في المملكة العربية السعودية ومصر. سيتم إجراء تقييم الأثر البيئي والاجتماعي وفقًا للتشريعات المصرية ذات الصلة وإرشادات جهاز شؤون البيئة المصري (EEAA) لتقييم الأثر البيئي (2009)، بالإضافة إلى الضمانات التشغيلية لبنك التنمية الأفريقي (AFDB).

مستشفى اندلسية توفر العلاج للمرضى من قبل طاقم طبي وتمريض متخصص ومعدات طبية. وهي من أفضل المستشفيات العام المعروفة، الذي يوجد به عادة قسم للطوارئ لمعالجة المشاكل الصحية مع وجود عدد من الأسرة للعناية المركزة وأسرّة إضافية للمرضى الذين يحتاجون إلى رعاية طويلة الأجل. المستشفى لديها مجموعة من الأقسام مثل الجراحة، والعناية العاجلة والوحدات المتخصصة مثل طب القلب وتشمل وحدات الدعم الشائعة مثل: الصيدلية. بالإضافة إلى ذلك، سيشمل المستشفى أقسامًا ومرافق مخصصة للعلاج الطبيعي والعلاج الكيميائي والعلاج الإشعاعي والتصوير والمناظير والجراحة والولادة ومركز القلب. تتكوم المستشفى من بدرومين وطابق أرضي و7 طوابق علوية. من المخطط أن يشغل المستشفى المقترح مساحة 4,165 متر مربع.

ومن المتوقع أن يبدأ بناء المستشفى في أغسطس 2022 ويستمر لمدة 10 أشهر على ان يبدأ التشغيل في يناير 2024.

11.4 Stakeholder Comments and Perceptions

Comments and perceptions raised by the different stakeholders engaged are presented in Table 11-2 below.

Table 11-2: Stakeholder Comments and Perceptions

Stakeholder	Comments/Perceptions
Potentially Affected Communities/Residents	The general perception held by communities/residents in proximity to the Project site was observed to be positive. Residents expressed their acceptance of the Project given its importance in developing Egypt's healthcare sector. No concerns were raised by community members regarding the potential impacts from construction. On the contrary community members expressed their eagerness for the Project to commence given that will improve the livelihood in the area and encourage the introduction of more businesses and services into the area.
Businesses	Shop owners interviewed expressed their support of the Project for the benefit of the healthcare system in Egypt. Shop owners and local vendors at the area expressed their eagerness for the Project to begin as it would increase traffic in the area and thereby potentially increase their sales. No shop owners interviewed had expressed any concerns on the potential environmental and social impacts resulting from the Project during construction and operation.
Locals	Locals interviewed in proximity of the Project location expressed a positive attitude toward the Project and requested more information on the possibility of getting internships and the employment opportunities offered by the Project. On the other hand, the main concern raised by locals in the area was related to traffic and noise given that the street where the hospital is located is very narrow.

APPENDIX 1 DOCUMENTATION REVIEWED

Document Title	Source/Organization
AMH Concept Design	Andalusia for Medical Services
AMH Feasibility Study	Andalusia for Medical Services
AMH Timeline	Andalusia for Medical Services
AMH Layout Maps	Andalusia for Medical Services
The Company's Policies on Environmental, Social, Health and Safety Aspects	Andalusia for Medical Services
Project Information Disclosed by the Company	Andalusia for Medical Services