Appendix:
The Generic Visual-Impact Checklist

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Introduction and Explanation

The Generic Visual-Impact Checklist was prepared to facilitate complete and accurate assessment of visual impact in the field by VRM practitioners. The general assumption made in preparation of the Checklist is that activities introduced in the landscape have many different subcomponents, each generating different potential impacts, regardless of site characteristics. The VRM practitioner may not be familiar with the technology or characteristics of the varied activities that are now introduced into the landscape, especially the newer energy-extraction and generation technologies. Therefore, the Checklist serves as an aid to the VRM practitioner to ensure that all general visual impacts would be considered in the evaluation of the given project. Of course the Checklist is general or generic, so unique site conditions may aggravate potential visual impacts or ameliorate them as the case may be.

All generic visual impacts listed are culled from the most complete and up-to-date sources. Documentation of visual impacts in general is extremely poor, and substantiation is even harder to find.

Activities are grouped by family: land management, resource extraction, power generation, power transmission, transportation, water-resource development, and waste treatment and industrial processing. Any specific activity impacts could be found within a project family, such as coal power plant within power generation, or could be a combination of activities and families, such as oil and natural gas activities (resource extraction) linked by an oil pipeline (transportation) to a gas and oil power plant (power generation), which in turn is linked to overhead transmission (power transmission).
As one can see from the initial listing of families and activities, there is little or no documentation of specific visual impacts. This is especially true for certain locatable mineral-mining practices, new forms of energy generation, and certain forms of material transportation.

In the left-hand column of the Checklist are abbreviations of the landscape components affected by the visual impact: vegetation (VEG), land form (LF), and structure (STR). This should help to indicate the nature of the impact as well as suggest mitigation.

On the right-hand side of the Checklist, individual sources and page numbers are noted for reference. This is an imperfect science; therefore, more rigorous or authoritative sources of documentation would be appreciated from users of this Checklist.

General Outline

I. Land Management
   Agricultural

II. Resource Extraction
   Oil and Natural Gas Activities

III. Power Generation
   A. Nuclear/Thermal Power Plants
   B. Coal Power Plants
   C. Gas and Oil Power Plants

IV. Power Transmission
   A. Overhead Transmission
   B. Oil/Slurry Pipelines

V. Transportation
   A. Water Pipelines
   B. Highways/Roads

VI. Water-Resource Development
   Impoundments/Diversions

VII. Waste Treatment and Industrial Processing
   A. Wastewater Treatment Systems
   B. Solid-Waste-Disposal Activities
   C. Manufacturing/Industrial Operations

The Generic Visual-Impact Checklist: Actions and Impacts

I. LAND MANAGEMENT
   Agricultural Land Usage

   1. Use of herbicides
      Dead vegetation (4:330)
      VEG → Short-term adverse effect on visual quality until vegetation breaks down or is replaced

   2. Channelization projects
      LF → Results in a straight ditch instead of a meandering stream bed (4:330)

   3. Drainage and irrigation projects

   4. Water developments
WATER → Add the element of open water to the landscape (4:329)
WATER → Change the water element from meandering stream to open expanse of water (4:329)

5. Prescribed fire
   Returns landscape to previous condition (4:329)

6. Brush control, mechanical disruption of soil and vegetation

VEG → Temporary adverse effect on visual quality as a result of uprooted vegetation (4:329)
VEG → Long-term improvement of visual quality of the landscape because of the introduction of grass (4:329)
VEG → Breaks up monotonous landscapes and creates pleasing patterns of change (4:329)

7. Grazing
   Presence of grazing animals (4:329)
   Enhances interest for travelers
   Reduces monotony

8. Uncontrolled grazing

VEG, LF → Causes accelerated erosion or destruction of vegetation (4:329)
   Sheet and gully erosion (4:329)
   Increased turbidity
   Change in odor and clarity of water

9. Structural range improvements; fences

STR → Introduction of structural elements in landscape (4:329)
   Visual fragmentation of view (4:329)
   Blocked or impaired view (4:329)

II. RESOURCE EXTRACTION

Oil and Natural Gas Activities

STR → 1. Towers, platforms, sea island piers (marine environments)
   Overboard disposal of refuse (4:390)

WATER → Floatable material
   Accumulation on shoreline
   Debris accumulation on bottom
   Aesthetic displeasure to underwater exploration

STR → 2. Refineries, tank farms, towers, platforms, sea island piers, fencing
   Increased desirability of unspoiled scenic areas (4:390)
   Overuse of areas and deterioration of scenic appeal
   Congestion and overcrowding

STR → Highly visible projections (4:390)
   Visual impact of truck and tank rail car traffic (4:390)

III. POWER GENERATION

A. Nuclear and Thermal Power Plants

1. Plant operation
   Scale dominance to existing landscape (4:381)

STR → Introduction of stack plume (4:381)
   Visibility degradation

2. Building sites cuts and fills, fences, and bulk-fuel loading
Blocked or impaired views
Concentrate demand on public views areas
Cleared swaths across landscape

LF, VEG ➔ Marred natural landform and vegetation pattern (4:381)
Highly visible slopes of disturbed cover
LF, VEG ➔ Marred natural landform and vegetation pattern

3. Cooling tower
STR ➔ High-profile cooling tower
SKY ➔ Plume characteristics are dependent on meteorologic conditions

B. Coal Power Plants
1. Construction of facilities for extraction, clearing conversion transportation, and central station combustion
LF ➔ Change of surface land features and configurations (4:410)
2. Plant site emission stacks
STR ➔ Strobe lights on stack (3:116)
STR ➔ Strong vertical line
STR ➔ Flashing lights attract attention (3:116)
3. Cooling tower and evaporation ponds
SKY ➔ Steam plume, especially during cold weather (3:116)

C. Gas and Oil
1. Local power and telephone service
STR ➔ Introduction of support pole structures (1:82–95)
2. Access-road construction
LF ➔ Maintenance road construction
LF ➔ Introduction of linear bands in landscape (1:82–95)
3. Pipeline construction
STR ➔ Introduction of linear structures of swaths in landscape (1:82–95)
4. Cut and fill
LF, VEG ➔ Slopes are accentuated by the total lack of vegetation
5. Crude-oil storage tanks
STR ➔ Introduction of high and massive elements (7:4)
6. Flare
SKY ➔ Height and burning flame makes flare visible day and night (7:4)
7. Exploratory drilling
STR ➔ Introduction of temporary drilling-rig structures to landscape (1:82–95)

IV. POWER TRANSMISSION
A. Overhead Transmission
1. Transmission route selection
STR ➔ Visible poles and lines over streams, rivers, lakes, coastal areas (4:381)
Increased visual access into previously inaccessible wetland areas (4:381)
STR ➔ Unsightly intrusions within landscape (4:381)
Increased desirability of unspoiled scenic areas
Appendix: The Generic Visual-Impact Checklist

Overuse of areas and deterioration of scenic appeal
Congestion and overcrowding

STR ——> Highly visible vertical projections (4:381)
VEG ——> Cleared swaths across landscape (4:381)
LF, VEG ——> Marred natural landform and vegetation patterns

2. Site-preparation field office and storage yard
   General construction (5)
   Clearing structural demolition and vegetation (5)
   LF ——> Earth work (5)
   Backfill and restoration (5:145)

3. Removal of vegetation
   VEG ——> Recognition that vegetation (except ground covers) has or
           will be removed for transmission line installation (2:29)

4. Installation of overhead transmission
   STR ——> Dominance because of extreme closeness
           A structure located less than twice its height from observer
           (2:29)
   STR ——> Excessive variety of structures
           More than one type of structure (i.e., H-frame or pole)
           in view and/or non-synchronization of structure location
           (2:29)
   STR, SKY ——> Silhouette (2:29)
               Exposure of structures with the sky as partial or full
               background
   STR ——> Focal interruption (2:29)
           The interruption of lines-of-sight to a focal point by a
           transmission line
   STR ——> Concentration
           A high density (real or apparent) of transmission structures
           in a localized area (2:29)
   STR ——> Spatial interruption (2:29)
           The apparent division of distinct landscape spaces or
           patterns by a transmission line. Space division is per-
           ceived from inferior viewing positions and pattern from
           normal or superior viewing positions and is usually
           related to middle ground (2:29)
   STR ——> Continual feature of extended view (2:29)
           Views along a right-of-way that extended from one dis-
           tance zone to another, particularly through middle
           ground into background (2:29)
   STR/LD ——> Incompatible topographic alignment
           Unsympathetic alignments that do not respect natural
           contours of existing landforms (2:29)
   STR ——> Scale dominance
           Disparity in relative size of transmission structures and
           landscape elements (houses, barns) accentuated by prox-
           imity
   LF ——> Soil contrast as a result of grading (2:29)
           Observable cut or fill necessitated by transmission-line
           installation
   STR ——> Special-feature compatibility (2:29)
           The violation of landscape and/or cultural elements that are
both singular and significant in a context of the project area as a whole (i.e., waterfalls, lakes, cultural centers)

LF  →  Edge violation
The visible crossing of a regional linear feature or line of transition from one landscape to another (i.e., valleys, ridge lines, or between different landscape types, such as forest-field or mountain-plain).

5. Transmission towers
Rigid, unnatural appearance, medium contrast to the form and lines expressed in natural landscape

B. Oil pipelines

1. Pipeline (9:3–312)
LD, VEG  →  Alter small-scale landforms and remove vegetation cover
Change in established scenic and open-space values

LF  →  Permanent primitive road is likely to remain

STR  →  Above-ground valves and pipeline bridge across rivers are visible

STR/VEG,
WATER  →  Pipeline at river crossing; oil spill would create an oil-covered area along the river until vegetation could reestablish itself (9:3–317)

2. Pump stations (9:3–313)
STR  →  Introduction of pump-station structure to landscape
Above-ground power-line transmission towers

V. TRANSPORTATION

A. Highways/roads

1. Road alignments, cuts, fills, retaining walls, cribs, revetted embankments (4:267)
LF, STR  →  Drainage-way terraces
Contrast between natural landforms and engineering features of highway significant if visible from public recreation area, residential areas, or scenic highways

STR  →  Urban or existing development patterns and engineering features of highway
Significant if visible from residential areas or from commercial operations that benefit from view

LF  →  Increased prominence of land or landscape features visible from highway
Control or prevent development that would visually degrade lands or landscape features prominently seen from highways

LF/STR  →  2. Embankments (highway above grade) berms, elevated highway (on structures, fences, and barriers landscaping) (4:267)
Blocked viewlines along visual corridors (valleys, stream courses, streets)
Sever visual continuity of open-space network
Fragmentation of open-space expanse
Isolate open-space areas from connection with larger open-space systems
Fragment image of community or neighborhood as a discrete cohesive unit
Disorientation or confusion of visitor or resident
Block or reduce view from residential areas or commercial operations that benefit from view
Decreased residential and commercial property values and rents
Decreased patronage to commercial operations
Reduce affiliations to community by residents blocked off by highway
Blocked viewlines to landmarks in community from residential and recreational areas and commercial operations that benefit from view
Decrease patronage to commercial operations

STR  → Elevated or above-grade highway out of scale with adjacent urban development
Highway is dominant element in view of community or neighborhood
Scale of highway overpowers scale of community or neighborhood
Decreased property values
Contrast between scales

3. Fill slopes, grading cut slopes and faces vegetation clearing (4:266)

LF  → Highly visible erosion and/or bare earth or rock scars
Significant if visible from public recreation area, residential areas, or scenic highway

4. Landscaping of cut slopes, fill slopes, graded areas, landscaping of median strips and highway shoulders, revegetation of cut slopes, fill slopes, graded areas revegetation of highway shoulders

VEG  → Contrast between existing vegetation and revegetated or landscape area
Significant if visible from public recreation area, residential areas, or scenic highways

STR  → 5. Night lighting, vehicle reflections, vehicle lights, vehicle movement (4:266)
Glare visible in recreational or residential areas
Visual distraction from pursuit of recreational, residential, or commercial activities

VI. WATER RESOURCE DEVELOPMENT

A. Impoundment

WATER,
STR  → 1. Impoundment (4:346)
Block viewlines along visual corridors (valleys, stream courses)
Sever visual continuity of open-space network
Fragmentation of open-space expanse
Isolate open-space areas from connection with larger open-space systems
2. Grading, flooding, draining, filling, clearing (4:346)

**LF →** Creation of permanent, highly visible landscape (drawdown rim, shoreline clearing, cut and fill faces) that vividly contrast with surrounding landscape

**VEG →** Creation of areas of highly visible dead, dying, decaying, or unhealthy vegetation
   Degrade visual attraction of area to residents and visitors
   Degradation of recreational potential

**LF →** Creation of mudflats (drawdown rim), erosion scars
   Loss of visual appeal to residents, recreational users, or visitors
   Degradation of recreational potential

**VEG →** Exposure of stumps and vegetation debris
   Degrade visual attraction of area to residents and visitors

**STR →** Engineering feature of the project out of scale with landscape
   Significant if visible from public recreation areas, residential areas, or scenic highways

**WATER →** Water body out of scale and character with surrounding landscape
   Significant if visible from public recreation areas, residential areas, or scenic highways

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**VII. WASTE TREATMENT AND INDUSTRIAL PROCESSING**

**A. Wastewater Treatment Systems**

**STR →** 1. Night lighting, vehicle reflections, vehicle lights
   Glare visible in recreational or residential areas (4:425)

**2. Pipelines**

**STR →** Storage of unattractive materials, equipment, and unsightly excavation piles
   Temporary decrease in visual access to surrounding areas (e.g., residential and commercial views) (4:425)

**STR →** 3. Landscaping, project structural facilities (tanks, ponds, operations building, incineration facilities) (4:425)
   Alter and/or block viewlines to scenic attractions from public viewing areas (scenic highways, public recreation areas)
   Alter and/or block viewlines to scenic attractions from commercial operations that benefit from affected view
   Decrease profits to operation
   Decrease commercial property values
   Alter and/or block viewlines to scenic attractions from existing or potential residential development
   Decrease in property values
   Alter and/or block viewlines along visual corridors (valleys, stream courses, streets)

Sever visual continuity of open-space network

Fragmentation of open-space expanse

Isolate open-space areas from connection with larger open-space systems

Siting of project in open-space area that forms vivid edge of community and distinguishes community from adjacent communities
Blurring of community definition as a distinguishable unit

4. Fences, project structural facilities (4:424)
   STR, LF → Contrast between natural landforms and engineering features of project
   Significant if visible from public recreation area, residential areas, scenic highways, or commercial operations that benefit from affected view

   STR → Contrast between urban or commercial development pattern and engineering features of project
   Significant if visible from residential areas or from commercial operations that benefit from affected view

5. Berms, fills, grading, cut slopes and faces, vegetation-clearing-treatment lagoons (4:424)
   LD → Highly visible erosion and/or bare earth or rock scars
   Significant if visible from public recreation area, residential areas, scenic highways, or commercial operations that benefit from affected view

6. Landscaping of cut slopes, fill slopes, graded areas revegetation of cut slopes, fill slopes, graded areas (4:425)
   VEG → Contrast between existing vegetation and revegetated or landscaped areas
   Significant if visible from public recreation area, residential areas, scenic highways, or commercial operations that benefit from affected view

B. Solid-waste-disposal activities

LF → 1. Landfills of trash and garbage
    Blown to adjacent property or into water
    Litter left on beach
    Attraction of insects, gulls, and rodents
    Physical annoyance, disease vectors
    Broken glass, sharp objects, rusty debris
    Bodily injury
    Increased public disregard for area
    Increased litter, vandalism, misuse
    Olfactory discomfort

   2. Automobile junkyards (4:434)
      LF, STR → Low compatibility with surrounding landscape (can be ameliorated to some extent by fencing)
      Intrusion within visual scene
      Increased desirability of unspoiled scenic areas
      Overuse and deterioration of scenic appeal
      Congestion and overcrowding

   3. Offshore disposal of solid wastes (4:434)
      Accumulated organic sludge on bottom
      Introduction of sewage and industry liquors
      WATER → Unappealing water color and noxious odor
      Intrusion within coastal scene
      Increased desirability of unspoiled scenic areas
      Overuse and deterioration of scenic appeal
      Congestion and overcrowding

   4. Landfill operation and completion (4:434)
Visual impact of new landform in creation and completion
Possible blocking of views

Shape, height, and form incompatible with immediate surroundings
New land use stimulated by completion of the landfill may be compatible with immediate surroundings

Final landscaping may add or detract from final landform

C. Manufacturing/Industrial Operation

1. New plant construction/operation (4:457)
Low compatibility of manufacturing activity located within sight of a recreational facility, historical area, or unique ecological setting

2. Vertical structures of the plant visible from great distances
Building colors and design conflict with natural coloration and surroundings

3. Power pylons and wires; bulk refining and processing utilities (4:458)

4. High visible projections
Intrusions within the view

5. Power pylons and wires; utilities, fences, railroads, tanks, elevators and warehouses, building-site cuts and fills, structures solid-waste disposal, bulk refining and processing
Visual intrusions
Increased desirability of unspoiled scenic areas
Overuse and deterioration of scenic appeal
Congestion and overcrowding
Blocked or impaired views
Concentrated demand on public-view areas
Increased demand on public-view areas
Congestion and overcrowding of area
Overuse and deterioration of area and facilities
Insufficient space to accommodate parking

4. Building-site cuts and fills (4:458)
Cleared swaths across landscape
Marred natural landform and vegetation pattern
Highly visible slopes of disturbed cover
Marred natural landform and vegetation pattern

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